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Inside Dope

By GEORGE
F. TAUBENECKLearn to live and laugh —
thus delay your epitaph

Stories of the Week

Gags of the Week

Let's Heed This Genius

On the Other Hand

Out of Our Mailbag

Now Hear This!

Stories of the Week

An itinerant Jesuit was put up for the night by a Baptist preacher—deep in the hills of Kentucky.

"You're the first Catholic I've ever met," confessed the Baptist.

"Really? Why do you have a picture of Pope Pius in your home?"

"I'll be doggone," confided the rural parson. "Is that who it is? A dadgummed salesman told me it was Harry Truman in his Masonic uniform."

Pink-whiskered J. Ham Lewis of Illinois reassured a freshman Senator:

"For the first six months you'll wonder how you got here. Afterward you'll wonder how the rest of us got here."

"I was born a Lutheran, and I'll die a Lutheran!" declared Hans.

"Man," interposed a Scotch Presbyterian, "have ye no ambition?"

"Let's make this a decent campaign, Sam," backslapped Candidate A to Candidate B.

"I'm with you, Estes. If you don't tell any lies about me, I promise not to tell the truth about you."

Gags of the Week

Nothing makes a man go places like a woman who enjoys going to places.

I take the view that if you cannot say what you have to say in 20 minutes you should go away and write a book about it.—LORD BRABAZON.

Happiness is a continual act of faith, imposing a spontaneous accepted duty to be cheerful.—DOROTHY THOMPSON.

One sign of maturity is the ability to be comfortable with people who are not like us.—VIRGIL A. KRAFT, Christian Advocate.

Let's Heed This Genius

Dave Ogilvy, who is responsible for such great advertising campaigns as "The Man In the Hathaway Shirt" and the Schweppes beard series, has engraved a "creative credo" for

(Continued on Page 8, Col. 1)

Gibson Refrigerator Calif. Bans Dairy 'Factory Charged' Residential Units Becomes Operating 'Giveaways' To Unsuitable Under Code, Says Detroit; Div. of Hupp Corp. Obtain Business

CLEVELAND—Through recent action of stockholders of Hupp Corp. and Gibson Refrigerator Co., Gibson has become an operating division of Hupp.

Last February, it was announced that Hupp had purchased approximately 60% of the 600,000 outstanding shares of Gibson stock from the Gibson family at a price of \$16 per share.

The following month, the directors of both firms approved an agreement whereby Hupp was to purchase the business and assets of Gibson. Later, Hupp and Gibson stockholders voted by substantial majorities

(Concluded on Page 45, Col. 1)

U. S. Airco Readies Jordon Expansion

PHILADELPHIA—Plans for steadily expanding production of food freezers and refrigerator-freezer combinations by Jordon Refrigerator Co., Inc., now operating as a subsidiary of United States Air Conditioning Corp., were announced late last week by David E. Feinberg, president of UsAirco, which acquired all of the outstanding capital stock of Jordon in January, 1956.

Feinberg also revealed a new executive alignment at Jordon,

(Concluded on Page 45, Col. 3)

Union Asbestos Sells Heating Div.

CHICAGO—Sale of Union Asbestos & Rubber Co.'s Heating Div. to Batavia Kritzer, Inc., Batavia, Ill., for an undisclosed sum, has been completed, according to a joint announcement by Edwin E. Hokin, president of Unarco, and Henry E. Kritzer, president of Batavia Kritzer.

The sale, Hokin declared, does not affect Unarco's Cooling Div., which will continue to market a complete line of residential, commercial, and industrial

(Concluded on Page 2, Col. 5)

Lennox To Advertise 2-Ton Central Unit For \$599 at Outlet

MARSHALLTOWN, Iowa.—Announcing that it is nationally advertising the retail price of its air conditioning equipment for the first time, Lennox Industries, Inc. said that during late spring and early summer,

Lennox' 2-ton "Stowaway" central air conditioner will be advertised at \$599 to the consumer, plus installation costs.

This price will be featured in full-page Lennox ads in such

(Concluded on Back Page, Col. 5)

B-9.1 Called Bar to Some Units; Heating, Cooling Groups Study New Rules

SACRAMENTO, Calif.—New regulations issued by the Bureau of Milk Control of the State Agriculture Dept. prohibit dairy distributors from giving "free gifts or free services to customers or prospective customers for the purpose of securing or retaining their milk, cream, or dairy product business."

The regulations, which became effective last week, also cover financing, credit extension, and purchase or sale of property. They spell out, for the first time, practices which the State Agriculture Dept. calls "unfair."

Free gifts and services banned by the new rules include installation and maintenance of customer-owned equipment; selling any property, real or personal, to a customer at a price less

The Home Market

Oust Appliances From Mortgage, Senate Asked

WASHINGTON, D. C.—The Senate Banking Committee's report on the 1956 housing bill it recently approved contains a request that the Federal Housing Administration review the practice of including in home mortgages appliances and "rapidly wasting assets."

Also in the report is the text of a proposed amendment to Section 203 (B) of the Senate bill. The proposal is aimed at curbing the sales of household equipment and furnishings under the mortgage.

"To be eligible for insurance under this section a mortgage shall not include as mortgage security items which are not an integral part of the real estate unless such items substantially protect or improve the basic livability or utility of the property and continue to enhance the security value of the property for the duration of the mortgage period."

"The administrator shall develop a list of items of household equipment and furnishings which shall not be eligible for inclusion as part of the valuation of an insured mortgage."

Propose Measures To 'Loosen' Builder Funds

WASHINGTON, D. C.—A House Banking subcommittee recently called for legislation to give "Fannie Mae" (the Federal National Mortgage Association) more freedom to help loosen tight mortgage money.

Changes in the agency's operation are especially needed, the subcommittee said, to counteract the possible "harmful consequences" of the Federal Reserve Board's recent increase in the rediscount rate.

(Concluded on Back Page, Col. 1)

frigeration code would be two.

In section 3.6 on experience required, a subsection (b) would be added that reads as follows:

"An applicant holding a Class A or Class B gas and/or oil burner contractor license in the city of Detroit, when recommended by the gas and oil burner board of examiners, shall be examined by the refrigeration board of examiners for a Class B refrigeration contractor license or for a restricted refrigeration contractor license, the choice of which will rest with the applicant."

In section 3.8 on classification and limitation, the new restricted license is defined as follows:

"(b) Restricted License: Limited to the installation of self-contained refrigerating systems used for air conditioning for human comfort and employing Group 1 refrigerants, installed only in residential, commercial, or industrial type occupancies, when actuated by motors or engines of not in excess of 100 horsepower."

(Concluded on Page 4, Col. 1)

Hermetic Units over 1-Hp. Need Pressure Relief

After Jan. 1 In Chicago

CHICAGO—In Chicago after Jan. 1, 1957, all refrigeration and air conditioning systems larger than 1 hp. and employing a hermetically sealed compressor assembly, the shell or casing of which cannot withstand a pressure equivalent to that generated by a fire, without overcoming the elastic limits of the shell or casing, will be required to have some positive means of overpressure relief device on the system.

That is the ruling issued by the City of Chicago Department

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G-E Heating, Cooling U.S. Thermo Purchases Names L. D. Nutter 90,000 Sq. Ft. Factory

BLOOMFIELD, N. J.—Appointment of Lee D. Nutter as manager-builder sales, has been announced by L. H. Hirschbach, manager of marketing for the General Electric home heating and cooling department.

Nutter was previously district sales representative for the General Electric Air Conditioning Div. in the Chicago area. Nutter joined General Electric in 1937 on the G-E business training course. Since then he has served as purchasing supervisor at the G-E York plant in Pennsylvania; manager of purchasing-appliance and merchandising, Bridgeport, Conn.



L. D. Nutter

U.S. Thermo Purchases 90,000 Sq. Ft. Factory

MINNEAPOLIS—Purchase of a 90,000-sq. ft. factory building in suburban Bloomington has been announced by U. S. Thermo Control Co., manufacturer of refrigeration units for trucks and railway freight cars.

The building was purchased from Baker-Raulang Co., Cleveland, a subsidiary of Otis Elevator Co. Price was not disclosed.

U. S. Thermo Control has had about 125,000 sq. ft. of space at several plant sites in the Twin Cities. The company will vacate some of these plants, it was reported.

The firm employs close to 500, it was said.

Baker-Raulang formerly made lift trucks in the Bloomington plant.

It has transferred this operation to Cleveland.

Calif. Bans Dairy Giveaways--

(Concluded from Page 1, Col. 3) than its fair market value; and purchasing any equipment, property, or merchandise from a customer at a price greater than its fair market value.

Also, stocking grocer shelves with products other than those distributed by the distributor; preparation of tax returns; taking of inventories; and assisting at sales promotions and events, except as otherwise authorized.

Regarding financing, the regulations forbid distributors to make, extend, or renew any money loans to any customer or prospective wholesale customer.

The rules also state that no distributor shall provide financial accommodations to a customer by guaranteeing payment of any obligation of any customer, or by acting as a co-signer on a promissory note or

other obligation of such customers, or by depositing money or collateral with persons or organizations in order that such persons or organizations will lend money or extend credit to any customer.

Among other things, the rules provide that credit shall not be extended in excess of 60 days on dairy products, from date of delivery, and that a distributor shall immediately place on a cash basis any wholesale customer who has failed to pay for any delivery of any dairy products within 60 days after delivery, or in default for 60 days in any other obligation to such distributor.

In addition, distributors may not purchase property from a customer or prospective customer and lease it back or resell under a deferred-payment contract.

3-Mo. Wholesaler Equipment Sales Up 7% over '55

WASHINGTON, D. C.—First-quarter sales of air conditioning and commercial refrigeration equipment distributors were up 7% compared with the like year-ago period, according to the Bureau of the Census.

In the same period, sales of distributors of electrical appliances, TV and radio sets and parts, and electronic parts and equipment increased 6% over the first quarter of 1955.

March sales of air conditioning and commercial refrigeration equipment distributors rose 1% above March, 1955, and gained 16% compared with February. The distributors' inventories at the end of March were 5% higher than on March 31, 1955, and 8% higher than at the end of February.

Sales of the appliance distributors in March rose 1% over the like year-ago month and were up 6% compared with February. Their end-of-March inventories increased 21% over stocks on hand on March 31, 1955, and were 7% higher than at the end of February.

The Census Bureau said first-quarter sales of all types of merchant wholesalers as a group were 10% ahead of the first 1955 quarter. Durable goods trades, in total, were up 17% over first-quarter 1955 sales, as compared with an increase of only 6% by non-durable goods trades during the same period.

March sales of merchant wholesalers were up 7% over February and 6% higher than sales in March, 1955. Inventories of wholesalers at the end of March rose 2% over the Feb. 29 level, but were 11% above stocks on hand a year ago.

The Census Bureau pointed out that data shown in its March wholesale trade report are based on reports submitted by a reporting panel of over 11,000 establishments which are representative of all merchant wholesaler firms in the country.

Union Asbestos--

(Concluded from Page 1, Col. 2) packaged units ranging from $\frac{1}{4}$ to 75 hp.

"Batavia Kritzer will continue operations in Batavia without interruption and will market the former Unarco heating line, including 'Dual-Vector' units, and the 'Hydro-Pac' water chillers, convectors, and industrial unit heaters," he explained.

"We feel this move will favorably affect Unarco's future earnings and should be equally beneficial to Batavia Kritzer."

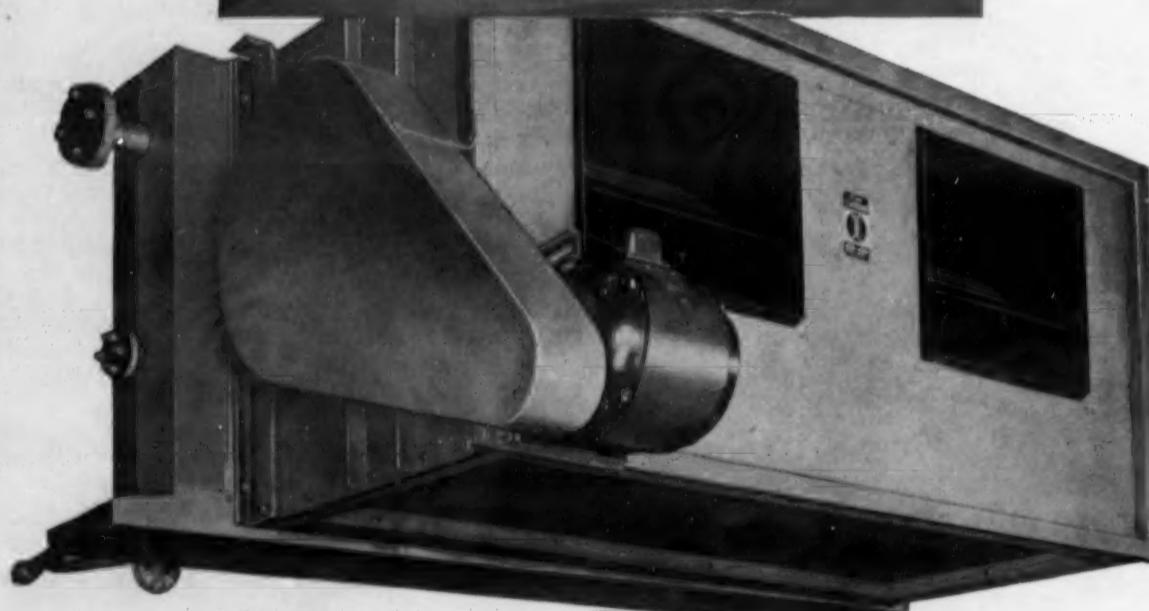
"Conditions in this field are highly competitive and, while well-established companies can operate profitably, it is a difficult and expensive process for Unarco, as a newcomer, to establish satisfactory sales distribution."

Henry Kritzer, who heads the new company, is also president of Kritzer Radiant Coils, Inc., of Chicago, manufacturer of radiant baseboard and fin tube heating coils.

Announcing...

Extra-Large CAPACITY

THERMOBANK



FOR FREON and AMMONIA

NOW...no job is too large for the **KRAMER THERMOBANK**

The only completely automatic system for freezing temperatures offering these extra large capacities. THERMOBANK requires no manual attention whatsoever.

Ceiling mounted, THERMOBANK takes no

precious floor space. You can store products directly under the unit.

Can be used as an independent system or with an existing large system without affecting the operation of other evaporators.

WRITE FOR BULLETIN 294-6

KRAMER TRENTON CO. • Trenton 5, N.J.



Tecumseh COMPRESSORS

encompass EVERY refrigeration application!



Model P1218
1/12 H.P.—285 BTU*



Model P81
1/8 H.P.—370 BTU*



Model P6112
1/6 H.P.—450 BTU*



Model P5312
1/5 H.P.—620 BTU*



Model AP48
1/4 H.P.—1000 BTU*



Models
S80 — 1/8 H.P.—430 BTU*
S84 — 1/8 H.P.—570 BTU*
S64 — 1/6 H.P.—570 BTU*
S6814 — 1/6 H.P.—650 BTU*
S5414 — 1/5 H.P.—630 BTU*
S4414 — 1/4 H.P.—630 BTU*
S4410 — 1/4 H.P.—1030 BTU*

2 OUT OF 3 HOUSEHOLD REFRIGERATOR MANUFACTURERS USE *Tecumseh* COMPRESSORS

HERE'S WHY—Tecumseh has designed and expanded two

complete lines for this application. Outside dimensions for each type of compressor are identical in all horsepower sizes. Therefore, the manufacturer of domestic refrigerators need design only one machine compartment for his entire line. All standard size household cabinets, as well as vertical freezers, may utilize this design, providing a major advantage in tooling and production costs.

The pancake line, now produced from 1/12 H.P. to 1/4 H.P., has BTU ratings from 285 to 1000, in regular increments. Customers realize additional savings in original cost, because this type compressor is a large volume item and economical to build.

The single cylinder, internal mount line covers approximately the same range of sizes. Starting at 1/8 H.P. it runs to 1/4 H.P. with BTU ratings from 430 to 1030.

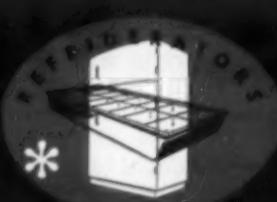
These 13 basic models are flexible enough to be supplied in literally hundreds of variations. This assures each customer of the best possible compressor from all standpoints, for his product.

Each Tecumseh compressor is built to the same exacting standards of quality and incorporates the latest advancements in compressor design. All have more than the adequate oil supply, suction gas cooling of the motor and glass terminals. Moving parts are fitted to tolerances up to .002 for quiet, vibrationless operation under all conditions.

In the household refrigerator field, as in many others, Tecumseh opens the way to lower costs, more economical use of plant and steady improvement of product.

* BTU RATING CONDITIONS: 130° Condensing Temperature
— 10° Evaporator
— 90° Room Ambient

COMPLETE LINES — VOLUME PRODUCTION — PRICED RIGHT



OVER 25,000,000 COMPRESSORS IN USE TODAY



The World's Largest Producer of Compressors for the Refrigeration Industry

TECUMSEH PRODUCTS CO.

EXPORT DEPT. - P.O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

Tecumseh, Michigan
Marion, Ohio

For more information about products advertised on this page use Information Center, page 30.

Proposed Detroit Code Changes--

(Concluded from Page 1, Col. 4) the following licenses to be required:

"Restricted gas. The installation only of gas-fired design heating units limited to input ratings not exceeding 300,000 B.t.u.h. per unit.

At the suggestion of Jack Duncan, representing the Detroit chapter of the Refrigeration and Air Conditioning Contractors Association, Drogosch agreed to write out an amendment to section 4.7 of the code that would limit a licensed contractor to purchasing only the type refrigerants for which he is licensed and exclude completely those holding the restricted license. In Detroit, a man must have a refrigeration contractor's license to buy refrigerant.

Licenses That Amendments Would Set Up

The amendments to the gas and oil ordinance would set up

the following licenses to be required:

"Restricted oil. The installation only of oil-fired design units and equipment limited to designs for use with Nos. 1, 2, or 3 distillates as defined in the U. S. Dept. of Commerce, Commercial Standard CS 12-40, having a maximum fire rate of 3 g.p.h."

Gas-fired design equipment is defined as those space heating furnaces, boilers, unit heaters, room heaters, recessed heaters, duct furnaces, or other such devices designed, built, and approved as units for gas firing.

Oil fired design equipment is defined as those space heating

steam generating, or water heating boilers, space heating furnaces, unit heaters, room heaters, recessed heaters, duct furnaces, or other such devices designed, built, and approved as units for oil heating.

Approved means that which is acceptable to the Department of Buildings and Safety Engineering.

As the gas and oil examining board does not have its duties spelled out in the ordinance but makes its own rules, Drogosch offered the following recommendation to the board:

"An applicant holding a Class B or C refrigeration contractor license, when recommended by the Refrigeration Board of Examiners, shall be examined by the gas and oil board of examiners for a Class A gas and/or oil burner contractor license or for a restricted gas and/or oil burner contractor license, a factory-charged system in the choice of which will rest which no refrigerant containing

with the license applicant."

To a question by Duncan as to the basis on which the respective examining boards are to recommend contractors for examination by the other board, Drogosch said that Department of Buildings and Safety Engineering records on the history of performance of the contractor should be the basis. A suggestion that a "character" reference also be included, was rejected.

The question of factory-charged remote systems was brought up by Tom Leeson of Leeson Air Conditioning Corp. and a member of the heating board of examiners.

Self-Contained System Conception Varies

Leeson wanted to know why the holder of a restricted license would not be allowed to install a factory-charged system in

parts are connected in the field other than by companion or block valves. He contended that there were really self-contained systems.

Drogosch, backed by Duncan and John Winslow of RACCA, contended that inasmuch as the refrigerant lines must be connected in the field, the system is considered remote and not self contained.

Backing up Leeson, William F. Hershey, Jr., sales manager of the Detroit branch of National-U. S. Radiator Corp., contended that such systems are recognized as self-contained by the Underwriters Laboratories.

Drogosch replied that he has received no word that they have received such approval or classification. He pointed out that the Detroit code incorporates the A.S.A. B-9.1 code in its entirety and that such systems do not meet the requirements of that code.

"Until the A.S.A. B-9.1 code is changed to include such systems, their installation in Detroit is illegal," Drogosch asserted.

He added that no where has he been able to find a definition of a companion valve or a block valve. He also pointed out that the A.S.A. B-9.1 code covers no larger than $\frac{7}{8}$ -in. o.d. copper tube and the systems in question use $1\frac{1}{8}$ -in. tubing.

Hershey contended that this was a matter of interpretation of the code and that it has been interpreted otherwise.

There the matter stood as the meeting adjourned.

Proposed Changes To Be Submitted to Groups

It was agreed that the Department of Buildings and Safety Engineering would print the proposed changes as developed by this committee. The changes would then be submitted to the groups the committee members represented for approval.

Henry Strong, executive secretary of the Refrigeration Industry Safety Advisory Committee, who sat in on the meeting, immediately expressed the dislike of RISAC for licensing of any sort.

"RISAC does not promote any codes or regulations," he emphasized. "It does advocate the A.S.A. B-9.1 code where code matters are newly under consideration or where changes are being made. Our observations indicate that a good mechanical code, with proper and adequate inspection, is probably the best where regulations are working."

"Ours is a young, growing industry," he concluded. "That which is right and proper and most practical shall and will evolve, unless held down by restrictive laws or the power of some individual or some particular group."

Strong's remarks stirred up a slight furor in the audience that brought Jay Biddle, executive secretary of the Detroit Warm Air Heating Association, to his feet.

As Drogosch tried to get the meeting back to order, Biddle commented dryly:

"They say they are a young industry. We must consider that some of the views expressed are due to their youth and inexperience."

DIVISIONS OF
CALUMET & HECLA, INC.
CALUMET DIVISION
WOLVERINE TUBE DIVISION
CANADA VULCANIZER CO.
FOREST INDUSTRIES DIVISION
GOODMAN LUMBER CO.



WOLVERINE TUBE

Division of Calumet & Hecla, Inc.

Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPARTMENT, 12 EAST 47TH STREET, NEW YORK 17, NEW YORK

For more information about products advertised on this page use Information Center, page 30.

ARW Reports Many Mfrs. Already Using Catalog Page Standards Set Up by Group

COLUMBUS, Ohio—The recommended standards for catalog pages for air conditioning and refrigeration parts, supplies, and equipment wholesalers have already been accepted and are being put into practice by a considerable number of manufacturers in the industry, it is reported by the Air Conditioning & Refrigeration Wholesalers Association (ARW).

It was also reported by E. L. Trampush, president, and Starr Hull, executive secretary of ARW, that following a presentation to some product sections of the Air-Conditioning & Refrigeration Institute, a considerable number of manufacturers will adopt a "color sheet" identification system for pricing sheets, which has been developed by the wholesalers' organization.

The catalog page recommendations are for catalogs which are to be reproduced by the photo-offset method. Purpose of the standards plan is to develop more economical and effective catalogs, and thus to expand the volume of business done by both the wholesaler and manufacturer.

"Advertising men, catalog publishers, and manufacturers agree that our recommendations for uniform catalog reproduction proofs will also effect definite savings for both the manufacturer and wholesaler," say the ARW officials.

Most of the details of the standards plan are included in a bulletin which is available from ARW headquarters, at 2607 N. High St., Columbus.

The bulletin provides over-all data on page size, and margins, and suggests column width and spacings for makeup with 2, 3, 4, and 5 columns to the page.

Suggestions are also offered on copy content, prices in copy, use of wholesaler and manufac-

turers named, suggested type composition, and other details of preparation. This is further explained through the use of sample pages illustrating the specifications on type styles and sizes.

Information may also be obtained from ARW headquarters on color identification sheet standards, covering net cost schedules, wholesalers' cost sheets, and list prices.

Baltimore Aircoil Renews Production; New Plant Rising

BALTIMORE—Baltimore Aircoil Co. is back in production after the fire that destroyed its offices and plant on Feb. 2.

The new B.A.C. Model "M" line of evaporative condensers and cooling towers (10 to 400 tons), for air conditioning and refrigeration applications, is now available on a normal delivery basis.

Construction of a new Balti-

more Aircoil plant is now under way and progressing on schedule. This plant is expected to be finished and in full operation by August.

American Gas Machine Appoints Distributor

ALBERT LEA, Minn.—R. J. Lickteig, sales manager for the Scotsman Ice Machine Div. of the American Gas Machine Co. here, announces the appointment of D. W. Stearly Co. of Evansville, Ind., as distributor with full service facilities in that area for "Scotsman" automatic ice machines.

Heating, Cooling Code Need Studied In S. C. City

COLUMBIA, S. C.—A special committee to discuss the need for a heating and air conditioning qualification ordinance for the city met here recently, it was reported.

Included on the committee were Joe W. Clark, Jr., air conditioning contractor; W. Rhett Martin, Jr., heating contractor; and M. L. Shaw, representing the local plumbing and heating contractors association, it was noted.

Whirlpool-Seeger Expansion Sets Plant For Air Conditioning Unit Production

EVANSVILLE, Ind.—An expansion program for the Evansville Div. of Whirlpool-Seeger Corp. which will cost in excess of \$19,000,000 this year began here recently with work on a 90,000-sq. ft. addition to the existing 962,000-sq. ft. Plant No. 2, acquired last year from International Harvester Co.

This was announced by John W. Krueger, vice president of Whirlpool-Seeger and general manager of the Evansville Div. here.

Plant 1 To Be Used for Air Conditioning Units, Components Production

When the present expansion plan is completed, Plant No. 1, the former Seeger Refrigerator Co. property, will be devoted exclusively to production of air conditioning units and components for refrigerators and freezers.

Plant No. 2 will fabricate and assemble refrigerators and freezers. It will also continue as the main office for executive, engineering, and administrative personnel of the Evansville Div.

\$8 Million Set for Re-Tooling Freezer, Refrigerator Lines

In addition to the plant extension, the program includes "more than \$8,000,000 for re-tooling of the 1957 refrigerator and freezer lines," Krueger stated. Approximately \$11,000,000 has been allocated for new construction, additional machinery and equipment, and rearrangement of production facilities between Plants No. 1 and 2, he said.

The 300 by 300 by 52-ft. extension to Plant No. 2 is scheduled for occupancy by Sept. 15, with production planned for early fall.

The new plant will house the complete press shop as well as tool and die facilities for the Evansville Div. It will also be used for steel storage, it was explained.

An underground conveyor system will be built in to facilitate handling of scrap steel. Raw materials will be delivered to floor-level loading platforms by a 300-ft. railroad spur, which will bring freight cars directly into the plant.

Rapid Conversion Made Of Harvester Plant

"The decision to undertake an expansion program here which will cost nearly \$20,000,000 before the end of the year was based largely on the rapid conversion that was made early in February of the former Harvester plant to freezer production," Krueger said. "This accomplishment made it possible for us to get our products on the market in time for the 1956 selling season."

In summing up the steps that led to the present expansion program, Krueger said: "This present program is actually the second step in the expansion of the Evansville Div. since the merger of Seeger Refrigerator Co. and Whirlpool Corp. last September. The first big step, of

Norge Ups Anderson To General Plant Mgr.

CHICAGO—Appointment of Kenneth E. Anderson as general plant manager of Norge operations at Muskegon and Muskegon Heights, Mich., was announced recently.

V. C. Rice, vice president of manufacturing and engineering, Norge Div., said Anderson will be in charge of the factory parts service plants.

Philco To Move Showrooms to Merchandise Mart

CHICAGO—Philco Corp. announced it is moving its showrooms here from the Furniture Mart to the Merchandise Mart soon.

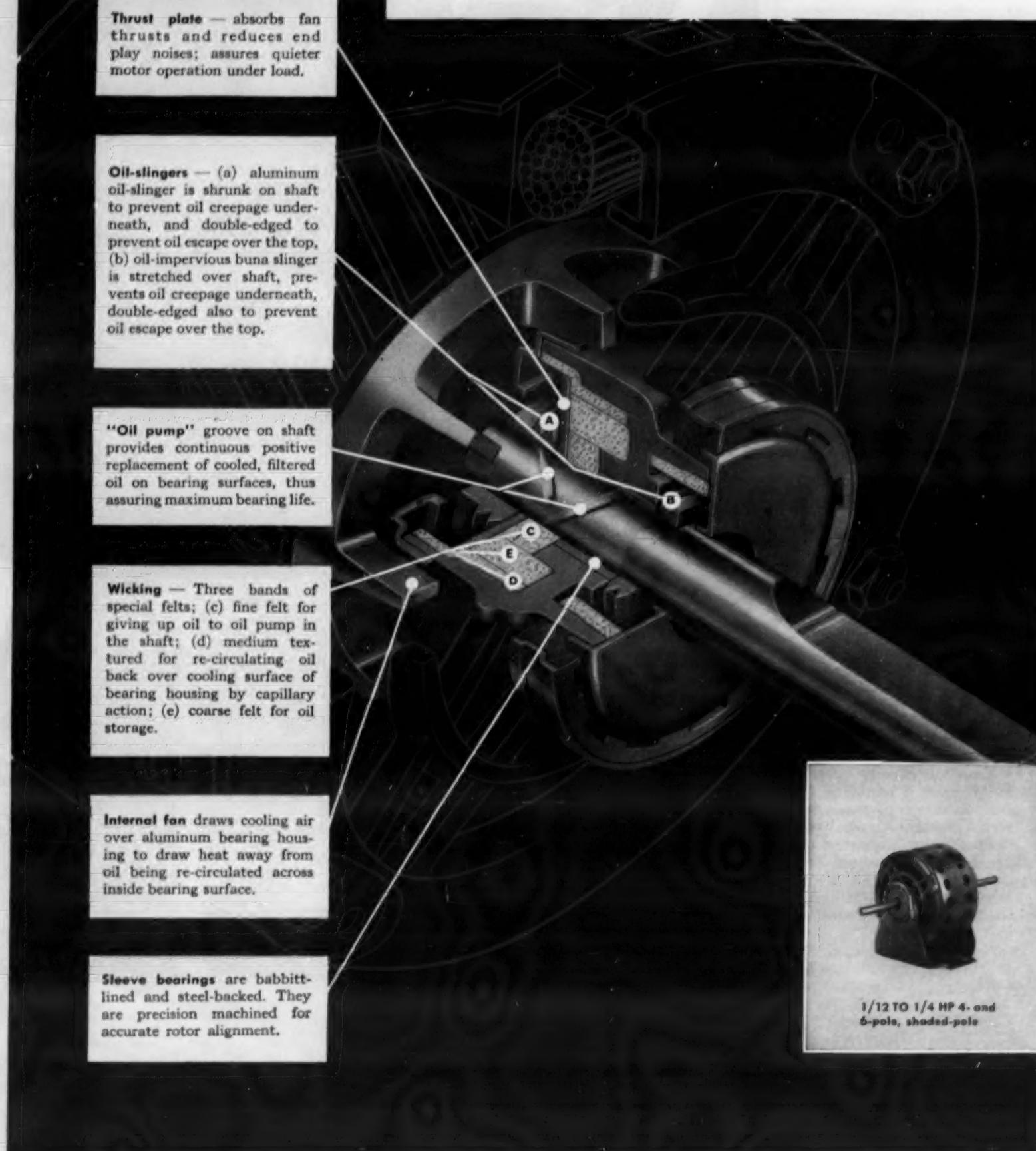
Philco vacates the Furniture Mart showroom about May 18 and will occupy temporary headquarters on the 11th floor of the Merchandise Mart until its permanent showroom is finished, it was explained.

Occupancy of the space is ex-

pected sometime in October, according to a spokesman. Reports indicate Philco's showroom will be the largest on the 11th floor of the building.

In addition, Lewyt Corp., Brooklyn, will move into showroom space in the Merchandise Mart, it was announced. The firm formerly showed its products at the American Furniture Mart, the report further explained.

Unique General Electric continuously bathes



1/12 TO 1/4 HP 4- and 6-pole, shaded-pole

CBS-Columbia of Detroit To Handle Mitchell Room Units

Tribune Distribution, Ad Forum To Be May 21-22

CHICAGO—Distribution of Mitchell room air conditioners in the Detroit area will be handled by CBS-Columbia of Detroit, it has been announced by E. A. Tracey, general sales manager of Mitchell Mfg. Co.

The contract was signed by Irving E. Russell, manager of CBS-Columbia of Detroit, and William Crockett, district sales manager of Mitchell.

CHICAGO—The Chicago Tribune announces that its seventh annual Forum on Distribution and Advertising will be held May 21-22.

The forum annually concentrates some of the nation's top executive talent on discussion of current problems in advertising and distributing goods and services to consumers.

Fedders Appoints Brady, Doerfler

MASPETH, L. I., N. Y.—Robert C. Brady has been appointed assistant sales manager and George Doerfler product manager, refrigeration division of the Fedders-Quigan Corp. it was announced.

Doerfler was previously employed by RCA, appliance division, as air conditioning analyst and assistant to the product manager.

Mfrs. Expect Room Conditioner Sales To Pass 1,500,000 Mark In 1956; Inventories Down

HOT SPRINGS, Va.—Sales, shipment, and inventory figures on room air conditioners all point to a "good" year, with the feeling generally held that the industry will move past the 1,500,000 unit mark in retail sales this year.

That was the consensus among manufacturers attending the meetings of the Room Air

Conditioner Section of the Air Conditioning & Refrigeration Institute at the annual meeting of the ARI here.

It was said to have been reported that manufacturers' inventories as of April 30 were down 27% from the same date last year, and that distributors' inventories were up 6%. This latter figure was not considered a problem since factory shipments of room air conditioners in the first four months of this year were reportedly up 28%, and distributor shipments to retailers were said to be 20% better than in the first four months of 1955.

A number of manufacturers reported that the carryover of 1955 units, which was not considered excessive, had been fairly well reduced by early season sales.

The Room Air Conditioner section is said to be in line with ARI's announced intention (as reported in the May 14 issue of the News) of giving force to its ratings standards, which would mean expressing a room unit's rating of cooling performance in terms of B.t.u. rather than in horsepower or "tons." However, many manufacturers are not doing so this year because of the problem of providing, or finding, adequate test setups to rate their units, it was stated.

One of the points of major controversy in this season's merchandising of room air conditioners—the manner in which the 7½-ampere room unit is being promoted, would be taken care of by a universally adopted B.t.u. rating method, it is felt. It was reported that in some cases the 7½-ampere models were being passed off as having the same ratings as standard models.

Room Unit, Shirt Mfr.
Join To Promote 2 Best
Ways To Keep Cool

NEW YORK CITY—Emerson Radio and Phonograph Corp. and Phillips-Jones Corp. have joined forces for a promotion and advertising tie-in featuring Emerson room air conditioners and Van Heusen Century Sheer shirts, it was jointly announced recently by Lester Krugman, Emerson's marketing vice president, and Robert Mohr, Phillips-Jones' advertising and sales promotion director.

The theme of the campaign will be "The World's Two Smartest Ways to Keep Cool."

Culminating in a double-page advertisement in the June 16 issue of the *Saturday Evening Post*, the tie-in, now under way, includes dozens of joint promotions by the Emerson and Van Heusen organizations and their dealers.

Among them are national sales contests awarding the co-sponsor's products as prizes; reciprocal promotion tie-ins, both in-store and in windows; flasher displays, counter cards, etc., in more than 1,000 stores throughout the country; cooperative ads; statement stuffers; radio commercials; and reciprocal displays in department store air conditioning and shirt departments.

shaded-pole motor bearing itself with cool, filtered oil

Special "oil pump" on shaft plus oil impervious slingers permit "sealed-in" lubrication for MAXIMUM BEARING LIFE

In a continuous cycle, a cooled and filtered oil supply is re-circulated through unique G-E shaded-pole motor bearings. Oil is "sealed-in," eliminating need for re-oiling and permitting maximum bearing life plus quieter operation. Just how "sealed-in" lubrication works is described in the illustration at the left.

"Sealed-in" lubrication on G-E shaded-pole motors is just one feature that makes these shaded-pole motors your best buy. Additional features of G.E.'s new 1/12 through 1/4 hp line of shaded-pole motors for larger fan drive ratings are:

Moisture-resistant resin insulation permeates every crevice and air space in slots, and between windings—dries hard and durable.

Forced internal ventilation from aluminum fan blades means cooler operation for longer bearing and insulation life.

Shell-type construction makes possible a short, lightweight, double-end ventilated motor—helps increase temperature differential between winding and bearings for longer life.

Aluminum end castings of new design are sturdily

constructed to assure precise bearing alignment. Generous ventilating openings provide optimum cooling.

New cushion rings are firmly clamped in place and with bonded outer ring hold motor firmly in its base under rigorous shipping conditions; also provide for quieter, vibration-resistant operation.

Pressure-cast aluminum rotor and fan blades help dissipate rotor heat for cooler, longer life bearings and insulation.

Short length of these new motors permits you to design more compact, better-looking products. Saves on your materials, too.

Three-way mounting is offered on this line of G-E shaded-pole motors: cushion end-rings, thru-bolts, resilient cradle bases. Also available are extra-high bases, and Quick Clamp mountings.

EXPERT APPLICATION HELP from G-E engineers is available to you. For complete shaded-pole motor service, contact your local G-E Apparatus Sales Office. Or write for Bulletin GEA-6134 to Section 632-1, General Electric Co., Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

SETTING THE PACE IN MOTORS FOR THE AIR CONDITIONING AND HEATING INDUSTRIES



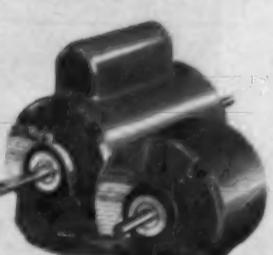
25 MHP TO 1/12 HP 15 TO 35 MHP 2- and shaded-pole and perm. 4-pole, shaded-pole, split cap.



1.5 TO 16 WATTS 4- and 6-pole, shaded-pole



1/6 TO 1/2 HP, split-phase



35 MHP TO 1/2 HP, perm.-split-cap.



1/6 TO 3/4 HP, capacitor-start

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)
advertising which states:

"In advertising, the beginning of greatness is to be conspicuous and different. . . . The beginning of failure is to be invisible and orthodox."

On the Other Hand

This want-ad we like:

Help Wanted—Female. LAZY, inefficient office manager with nasty disposition and violent temper seeks equally indolent Inst. of Technology.

helper to maintain premises from which boss is absent four days a week. We have a real dark thriller type salesman who hangs around a lot. We're next to coffee shop and across the hall from powder room. Doctor's degree in math not essential but you should be able to add and subtract. Box 2890.—Grand Rapids Herald.

Out of Our Mailbag

Are you, beloved reader, occasionally sad or frustrated?

If so, prepare to be pleased immensely forever. Quoting a letter to "Dope":

Editor:

Do you publish a magazine or ad sheets? If so, would you like to gain the honor, glory, pride, and prestige of helping pioneer a worthy humanitarian movement? If your answer is "NO," then will you please tell me: What is the best thing in life? "Money?" Suppose you had ALL the money in the world, what could you do with it? Would your money enable you to keep on living forever?

The fact is that the best

thing in life is LIFE ITSELF! If a man could attach no value or any importance to his own life, then ALL the money in the world would have no value to him. We all need money in order to obtain our daily essentials of life. However, each of us is duty-bound to try to EARN his money—by rendering a useful service to his fellow beings.

I am trying to EARN MY MONEY by conscientiously striving to pioneer a new type of service. Its ultimate purpose is to provide all mankind with such ways, means, and facilities as might have the possibility of helping them to gain, acquire, and enjoy "the best things of life." Does SUCH a service deserve any consideration and

support? If your answer is "NO," I will pay you 10 dollars for giving me the true name and address of a person who is trying to render to society a GREATER, a NOBLER, and a MORE IMPORTANT SERVICE.

However, if you are affirmatively and favorably inclined, then here's a little proposition for you: 1. All you need to do is to print the following ad: "WOULD YOU BE HAPPIER IF there were no more wars, dictatorships, communist perils, strifes, crimes, poverty, labor troubles, unemployment, depressions, chaos, and other ills? If so, and you reside in the U. S. A., investigate Progressive Humanology. Address David Ornsteen, File No., DuQuoin, Illinois."

My ad pertains to a correspondence course of instruction, originated, written, and published by myself. At present, my tuition fee is \$10. I also sell a few books. Their prices range from 25¢ to \$2.50.

2. I will pay you 25¢ for each bona fide reply I receive from a person reading my ad in your publication and answering it. If a replicant enrolls for my correspondence course or orders any of my books, any time within two years, I shall also pay you 10% commission.

3. I will assign you a "file number," in the hope that each replicant (or "inquirer") mentions it in his communication. This helps me keep accurate records. However, if you so prefer, you are welcome to print the ad over your own name and address. In that case, all replies will come to you. You can forward them to me periodically.

4. On or about the 15th of each month I shall mail you an accounting, accompanied by remittance covering payment for all results and business I obtained from your publication during the entire preceding month. If you do not hear from me in ANY month, it means that I have received NO results whatever from your publication.

If you are interested, I shall appreciate your reply. Please feel free to ask ANY questions you wish. You assume no obligations. If you choose to print my ads, you will be excused from the expense of mailing me any copies of your magazine or other literature. I will be solely interested in receiving replies to the ad. I shall cheerfully strive to discharge all of my obligations toward you if you decide to cooperate with me.

Yours for Progress,
DAVID ORNSTEEN

Now Hear This!

General Electric Co.
Bloomfield, N. J.

Editor:

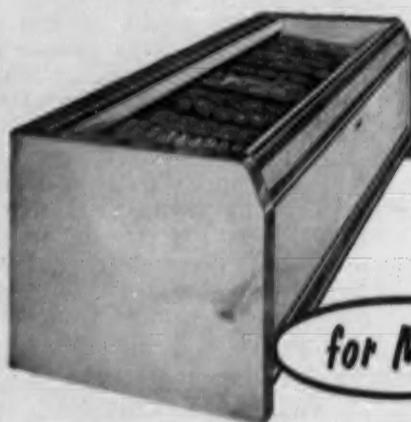
Here is a voice out of the past, if there ever was one.

Having been one of the "pioneers" in the Household Refrigerator business, your article in the March 12, 1956 issue "Historical Lesson for Air Conditioning Promoters" struck a responsive note in my heart.

The result is I would like to have your permission to reprint this article and send it to our G-E Air Conditioning Sales Representatives and Regional Managers. I am sure they are all

(Concluded on next page)

3 complete KOCH lines 106 NEW MODELS



with exclusive KOCH
SELL-O-VISION.

for Meat



for Frozen Foods

for Produce

**Designed for... Every Floor Plan
in Each Department
in Every Supermarket**

- Single Duty • Wall Type • 7' & 10' Length
- Double Duty • Island Type • Endless

With Exclusive Koch Colorbands

KOCH

refrigerators, inc.
KANSAS CITY 15, KANSAS

For more information about products advertised on this page use Information Center, page 30.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from preceding page) subscribers to AC&RN and undoubtedly have read it, as they do all of your informative material. However, I want to make sure as far as this article is concerned.

Incidentally, attached is a new version of the "Ten Little In-

dians" item, written by one of our enthusiastic Sales Representatives, F. R. Vanlandingham, which you are at liberty to publish if you so desire.

Best personal regards.

E. H. NORLING,
Manager

"TEN LITTLE INDIANS"

There was one Little Dealer who sold quite a few made a little money and then there were Two

Two Little Dealers, who for a fee gave good installations handled their service and soon there were Three

Three Little Dealers cleaned up their store invited the public to look and now there are Four.

Four Little Dealers All alert and alive gave pride to the profession and now there are Five.

Five Little Dealers used the old sales tricks and lo and behold Now there are Six

Six Little Dealers and one went to Heaven but two more sprang up And now there are Seven

Seven Little Dealers With predestined fate of increased residential cooling and now there are Eight

Eight Little Dealers with a complete line spent 5% on Advertising and now there are Nine

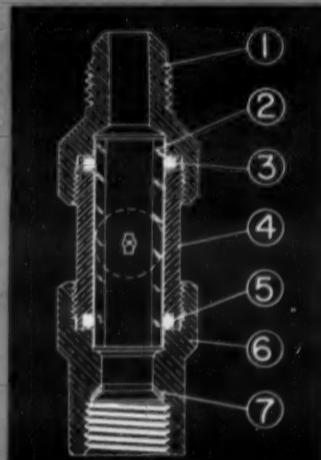
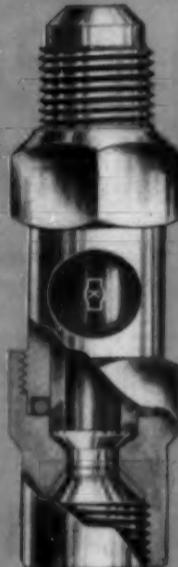
Nine Little Dealers With Merchandising ken Increased their business And now there are Ten

Ten Little Dealers Happy and fat. Successful and prosperous with the Sales they'd begat.

—F. R. VANLANDINGHAM

TROUBLE DETECTOR

KEROTEST R81C MODEL IN-LINE SIGHT GLASS



1. Brass Cap	4. Brass Body
2. Pyrex Tubing With Blast Etched Indicator "K"	5. Buna N 1010 "O" Ring
3. Buna N 1010 "O" Ring	6. Brass Cap
	7. Copper Seal Gasket

The redesigned Kerotest R81C Model In-Line Liquid Indicator is an excellent trouble detector in any air conditioning or refrigeration liquid line.

An indicating "K" blast etched on the Pyrex sight glass magnifies when flow of refrigerant is uninterrupted and system is fully charged. When "K" is not magnified it indicates a shortage of refrigerant or restriction of flow in the system. Gas bubble may also be seen in the sight ports indicating shortage of refrigerant.

The sturdy bar stock brass body protects the Pyrex heat resisting tubing and has adequate wrench flats for ease of installation.

Available in both male and female flare sizes with a maximum operating pressure of 300 p.s.i. and temperature of 200° Fahrenheit. Write for catalog pages today.

KEROTEST

KEROTEST MANUFACTURING CO. 2523 LIBERTY AVE., PITTSBURGH 22, PENNSYLVANIA

American-Standard Distributor Outlines New Promotion Aids In Home Conditioning Drive

CLEVELAND—At a dealer meeting held recently at the Amstan Cleveland Air Conditioning Branch, 75 local heating and air conditioning contractors heard plans for an all-out promotion for American-Standard air conditioning in the Cleveland market.

Lyle Groff, Amstan Cleveland manager, explained to the dealers that the Cleveland Air Conditioning Branch is a specialist distributor organization devoted solely to winter, summer, and year-round air conditioning.

Gil Ruston, Amstan's national sales development manager, outlined the Cleveland market and its potential.

SEE NEED FOR 'SPECIALISTS' TO DEVELOP MARKET

Ruston pointed out that Amstan was fully convinced of the profitable future and rapid expansion of the summer air conditioning market, and of the fact that it could be developed best by a specialist distributor organization actively supporting and promoting a select specialist dealer organization.

Edward Eddy, Amstan's national advertising and sales promotion manager, explained the extensive newspaper and radio advertising campaign being sponsored by Amstan for American-Standard air conditioning.

He further explained that each participating dealer would receive without charge a complete dealer identification and promotion package including a specially prepared, personalized, direct mail campaign produced and mailed for him at no charge.

"Under this new program," said Eddy, "we will provide, free of charge, an internally lighted double-faced outdoor sign, a lighted indoor sign, booklets, folders, window banners, and other material worth \$130 to each dealer who will run cooperative newspaper advertising with us during the campaign period. We will also feature dealers in rotation on our extensive spot radio campaigns on two Cleveland stations."

PROJECT BUILDER PROMOTION

William Sheehan, American-Standard Air Conditioning Div. advertising manager, also spoke briefly on the project builder promotion plan offered by the division.

"Under this plan," said Sheehan, "builders of year-round air conditioned homes can obtain cooperative newspaper advertising, specially designed brochures, billboards, air conditioning booklets, display material for the model home, plus a special price on the installation of the model home air conditioning system."

Airtemp Names Griggs To Field Engineer Post

DAYTON—The naming of Raymond L. Griggs as Airtemp field engineer for the Columbus, Ohio district, has been announced by F. J. Laughna, director of regional operations, Airtemp Div., Chrysler Corp.



Edward Eddy, advertising and sales promotion manager for Amstan Supply Div., American-Standard, tells Cleveland air conditioning dealers about the advertising and promotion campaign being conducted by Amstan in the Cleveland area. Seventy-five local heating and air conditioning contractors heard Eddy at a dealer meeting held at the Amstan Cleveland air conditioning branch.

Robert S. Ingersoll Elected President of Borg-Warner In Top Management Shift

CHICAGO—Robert S. Ingersoll was elected president of Borg-Warner recently in a given the additional responsibility of vice chairman of the executive committee.

The selection of Robert S. Ingersoll, 42, as president and chief operating officer climaxes his steady rise through the executive ranks of the corporation.

He first joined Borg-Warner in 1939 and worked in various research and engineering capacities until 1942, when he was appointed works manager of the Kalamazoo, Mich. plant of the Ingersoll Steel and Disc Div., it was noted.

He continued to advance until he was named an administrative vice president of the parent Borg-Warner corporation in 1953.

All these advantages in the famous Honeywell Round heating-cooling thermostat

- 1) **Ultramodern**, the Honeywell Round is the world's largest selling thermostat.
- 2) **Fast response**. Low-voltage design gives maximum sensitivity while reducing your wiring costs.
- 3) **Heating and cooling anticipation**. Eliminates temperature lag on the beginning and end of the compressor cycle—maintains precise cooling levels.
- 4) **Mercury switch**. Has an enclosed, dust-free switch that guarantees dependability.
- 5) **Sub-base combinations**. Eight combinations make the Honeywell Round the most versatile heating-cooling thermostat, with multiple switching action.
- 6) **Decorator feature**. Honeywell Round features the famous snap-off ring that can be painted to blend with any wall.
- 7) **Will outperform** any comparable thermostat made.



Never before such flexibility,

All these features in the new Honeywell W212-Panel

- 1) **Complete circuitry** allows you to "customize," using the features your particular installation requires.
- 2) **Remote control**. Panel contains fan relay, permitting constant fan operation from the thermostat selection switch.
- 3) **Available with or without Hi-Lo pressure control**.
- 4) **Compact**—only 8 1/4" high, 7 1/4" or 9" wide (if pressure control is included), 4" deep.
- 5) **Accessible**. All components on one sub-panel, easily removed for servicing.
- 6) **Simplified wiring** permits factory wiring of heating-cooling circuit, except for power supply and thermostat connections.
- 7) **Guaranteed** for one year as a complete unit by Honeywell.



5 Air Conditioning, Heating Distributors Appointed by Gibson

GREENVILLE, Mich.—Earl Palmer, manager of the Air Conditioning & Heating Div. of Gibson Refrigerator Co., has announced the appointment of a number of new distributors of Gibson residential and commercial air conditioning and heating equipment in Pennsylvania, New Jersey, Delaware, and Florida.

Douglas Contractors, Philadelphia, will cover six counties in Pennsylvania; Camden, Gloucester, and Burlington counties in New Jersey; and New Castle county in Delaware. L. Douglas Dubin is the owner of the firm.

Dietl & Kraft, Inc., Newark, N. J., has been appointed as a distributor in Bergen, Essex, Hudson, Morris, Passaic, and Union counties in New Jersey. Progressive Refrigeration,

Trenton, N. J., has been assigned the counties of Mercer and Hunterdon in New Jersey and Bucks county in Pennsylvania. David S. Louria and Louis Louria are partners in Progressive Refrigeration.

Traynor-Dean Appliances, Inc., Tampa, Fla., already a Gibson appliance distributor, is adding residential and commercial equipment. Distribution will be in 22 counties in central and southern Florida.

Frank M. Traynor is president of Traynor-Dean, and Roy L. Dean is secretary and treasurer. Jerry Williams is service manager.

Air Conditioning Supply Co., Daytona Beach, Fla., has been appointed as a distributor in 10 counties located in northeastern Florida.

Theodore M. Williams is owner of Air Conditioning Supply, Stuart Loe is sales manager, and W. Hosford, service manager.

Dealers Advised To Take Time To Sell, Make Quality Sale

DETROIT—Take the time to sell your product and take the time to sell quality, William Lake, residential sales manager for Carrier Corp., advised dealers here recently.

"You may have the best installation crew in the business, the best product on the market, and the best service department in the city, but it will do you no good unless you take the time to sell it," he said.

"The customer doesn't know about it. All he hears is the price quoted.

"There is an ever growing resurgence to quality," he asserted. "People will pay for quality, but they have to know it is there.

"It is up to you to tell them about it."



OVER 100 Shana Mfg., Inc. dealers and distributors attended the first in a series of "Shana-Air" midwest air conditioning training schools which are scheduled throughout the country. The schools are set up to train dealers and distributors so they can properly install, service, and maintain Shana's air conditioning units, it was explained.

Talks, Slides, Displays, Queries Answered Mark Initial Shana Air Conditioning School

CHICAGO—Over 100 leading dealers and distributors of Shana Mfg., Inc. attended the first Shana-Air midwest air conditioning training school recently. This was the first in a series of one-day training schools which Shana has scheduled throughout the country.

These schools are being set up to train Shana dealers and distributors so that they can properly install, service, and maintain the firm's air conditioning units, it was explained.

Participants Came From 6 Midwest States

Harry G. Shaffer, president of Shana, opened the meeting by introducing principals of the company and welcoming those attending the school. There were participants from the six midwest states of Illinois, Indiana, Michigan, Ohio, Wisconsin, and Minnesota.

Marvin A. Kagan, chief engineer of Shana, presented a detailed lecture on the firm's approach to air conditioning and the Shana-Air line of equipment. Colored slides were used by other Shana engineering personnel to illustrate mechanical operation of the Shana-Air units.

Individual parts of the units were displayed and available for examination. Throughout this entire period all questions and problems pertaining to the operation and installation of Shana equipment were discussed and answered in detail.

3 Additional Lectures Followed In Afternoon

After lunch there were three additional lectures: (1) air conditioning principles (flexibility of installation and servicing of Shana-Air units); (2) methods of load calculation (short cuts and simplified methods for both residential and commercial units); (3) service in application (servicing, high points of proper installation and special features covered by the Shana-Air warranty and guarantee).

Comprehensive Pack Of Literature Given

All dealers and distributors attending the meeting were given a comprehensive packet of literature to help guide the instruction period. This kit contained brochures and manuals with illustrated descriptions of the operation and mechanics of each Shana unit available.

On display at the meeting were a number of Shana units, some with cases removed so that the motor and component parts were fully visible for examination by the group, it was added.

The meeting ended with a question and answer period guided by a panel of Shana engineers.



These new Honeywell sub-bases—featuring 8 different switch combinations—offer you a flexibility never before available in the air conditioning field. You can give your customer the exact switch and thermostat combination he wants. Sub-base serves as mounting plate—thermostat simply screws on. Eliminates all wiring to thermostat. Increases ease of installation. Prewired factory-built W212 control panels are available to accommodate all thermostat and sub-base combinations.

New Honeywell Sub-Bases offer wide range of switching actions.

For use with T87A

Q405A—Heat-Off-Cool, Fan On-Auto

Q405B—Heat-Cool, Fan On-Auto

Q405C—Heat-Off-Cool

Q405D—Heat-Cool

For use with T87C

Q405E—Cool, Auto-Off, Fan On-Auto

Q405F—Heat-Off-Cool, Fan On-Auto

Q405G—Heat-Off-Cool

Q405H—Cool-Auto-Off (extra pole wired for continuous fan operation)

such dependable performance

Honeywell's heating-cooling control system

- One thermostat—the famous Honeywell Round
- Eight sub-bases—offering complete choice of switch combinations
- Sturdy, easily installed control panel

HERE'S the most flexible control combination ever conceived for heating and cooling—all in one simple system. It's designed around the beautiful Honeywell Round thermostat—and that's the only thermostat you need stock for heating and cooling. A variety of sub-bases offers 8 different switching combinations. The simplified and rugged W212 control

panel completes the system. No other controls allow you to integrate present designs and plan new ones with such a wide choice of combinations.

Find out how these versatile control combinations can add sales appeal to your line. Call your local Honeywell office today. Or write direct to Honeywell, Dept. AN-5-51, Minneapolis 8, Minnesota.

MINNEAPOLIS
Honeywell

Air Conditioning Controls



112 offices across the nation

For more information about products advertised on this page use Information Center, page 30.

FTC Hearing Examiner Issues Order Which Would Dismiss 'Misrepresentation' Case Against Evis

Washington, D. C., May 14—A Federal Trade Commission hearing examiner issued an order recently which would dismiss for lack of proof charges that Evis Mfg. Co., San Francisco, has misrepresented the operation and advantages of the Evis water conditioner.

This is not a final decision of the commission and may be appealed, stayed, or docketed for review.

Hearing Examiner Abner E. Lipscomb's decision was issued following extensive hearings on the merits of a commission complaint, issued Feb. 5, 1954. This complaint had charged to be false the company's representations that the conditioner has special properties, will beneficially treat water, makes such chores as dishwashing more

economical and eliminates some of the destructive effects of water on pipes.

The examiner ruled that there was either no evidence to support the charges or that the evidence adduced was inconclusive.

The Evis water conditioner is described as "an oversized pipe coupling with an interior post integrally cast in place, which is intended to be fitted into water systems for the purpose of beneficially treating and conditioning water."

The company advertises that the device is made of specially processed metal and produces a catalytic effect on water passing through it, which is said to (1) solve hard water problems, (2) prevent and remove scale from boilers, (3) use less soap, (4)

reduce the cost of heating water, (5) eliminate harshness of water to the hands, and (6) prevent or reduce scum, rust stains, and corrosion. According to the company, it also is beneficial in agricultural irrigation.

Summing up the record of scientific and consumer testimony, the examiner said that the device appears to operate on a principle unknown to or unrecognized by present-day science.

The scientists admit, he said, that they do not understand the theory of its operation and will not preclude that it may operate as represented.

In view of this possibility, he continued, and the conviction that the burden of proof has not been sustained, "we must not take the risk of interfering

with the development of a device which may prove to be the first practical application of a scientific principle heretofore undiscovered."

In conclusion he said:

"It is the purpose of the Federal Trade Commission, and of Congress in enacting its empowering statutes, to remove hindrances and obstructions in the course of commerce, and to direct and facilitate its flow—never to set up roadblocks in its way. We cannot, in this instance, justify the issuance of an order which might act as a brake on the wheels of progress."

In all there were 122 witnesses testifying at hearings on the complaint. One hundred of these were presented by the firm, of whom 92 were users of the device. A majority of the remaining 22 were scientists or experts giving opinion testimony based in part on tests performed with the device.

The material published on these pages constitutes the complete text of the Federal Trade Commission's official release on the initial order of a hearing examiner in the matter of the charges brought against the Evis Co.

Of this latter testimony, the examiner noted that in many instances the scientists conducting the tests failed to comply with the manufacturer's instructions for the installation and operation of the device.

For example, tests were conducted to determine whether the conditioner will prevent or remove scale in boilers, water heaters, and other parts of water systems.

Among the instructions ignored in this instance, the examiner said, was the requirement that electrical conduits be kept away from the piping system where the Evis unit was installed. In fact, he continued, in the test an electrical circuit was wrapped around the pipe.

In other instances, the examiner added, tests were not performed under conditions comparable to those of practical use. In a test to determine whether the unit would improve the texture of soil, he said, the soil was "separated and graded and aerated," "screened to refine the particles" and "passed through a sieve. . . ."

The tests, he concluded, "were not performed under conditions comparable to those obtaining in practical use." Further, he pointed out that in a descriptive pamphlet the manufacturer stated that "uniform graded" solids will not demonstrate the usefulness of the Evis, but that when Evis-treated water is used on "natural soils in place," actual differences will be observed.

In still other instances, the examiner continued, there is no evidence in the record relating to the charges made. There is nothing to disprove that the product will give water a silky-smooth quality for hair, bath, dishes, laundry, or car-wash. Nor is there any evidence con-

(Concluded on next page)

York's new training program unlocks the door to big profits in home air conditioning

It took years to develop, but it was worth it! Because York now offers you a training program head and shoulders above anything else in the industry. It's designed for quick action . . . to get you into the rich residential field *fast*, and help you get *more out of it* once you're in! Only York, with over 70 years in the cooling field, could bring you such a course. You'll be taught by factory-trained experts, using methods that have been thoroughly tested and proved to work. And you don't have to be an engineer to follow what's going on. This is your chance to get in on the ground floor of the booming home air conditioning industry. Don't miss out! Call your nearby York distributor for complete details, or mail the coupon today!

York teaches you how . . .
makes installation easier . . .
gives you more to sell!

• York Home Air Conditioners are engineered and factory-assembled for *quick, easy installation*. Electrical controls pre-wired at

the factory . . . you make only a few simple connections. York gets you in and out—fast!

- Each cooling system *hermetically sealed*. No belts, pulleys or gaskets—no nuts or bolts to leak, squeak or break. Oil and Freon are sealed in, no field charging, no tubes to run. Your profits don't go down the drain in costly service calls!
- Simple *capillary tube feed* controls flow of refrigerant. No summer-winter changeovers required. There's nothing to wear out—no tricky expansion valves to get out of order.

York has the models, too!

Waterless and water-cooled, "add-on," year-round, gas and oil-fired, remote systems, handsome packaged units . . . there's a York Air Conditioner for every need. Across the board, York gives you *more . . . more training, more quality, more models, more profits!* Get in touch with your York distributor today. Or mail this coupon.



Manager of Sales, Commercial Division
York Corporation, York, Pa.

Rush me complete details on York's new Training Program and what it means to me.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

ACA



Quality speaks a language everybody understands. Wholesalers, dealers, and users alike know that *Larkin* means quality—of workmanship, materials and performance.

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.

FTC Examiner Issues Order--

(Concluded from preceding page) gineers or operating engineers with long experience. The installations where the Evis unit is in use include industrial plants, lumber mills, public buildings, hospitals, and other institutions.

One allegation of the complaint charges the company with misrepresenting that the product will cause hard water to become soft. This allegation is based on an unwarranted interpretation of the advertising, the examiner said.

Since 1951, the word "soft" has been qualified in respondent's advertising, which repeatedly states the device is not a water softener.

In short, the examiner said, the allegations of the complaint have not been supported by reliable, probative, and substantial evidence.

Ninety-two of the company's 100 witnesses are users of the product. Some are licensed en-

sized, these attainments "cannot be accepted as a substitute for an objective testing of a device under the conditions in which it is intended to be used and operated."

Admiral's First Quarter Net Earnings Climb 6%

CHICAGO—Net earnings of Admiral Corp. and subsidiary firms rose 6% in the first quarter of 1956 while sales decreased 3%, it was announced by John B. Huarisa, executive vice president and treasurer of the company.

Sales in the first three months were \$48,663,959, compared with \$50,034,396 in the comparable period of 1955. Pre-tax earnings for the quarter amounted to \$2,655,990, up 47% over 1955's \$1,805,702, the announcement continued.

Profits after taxes were \$1,310,336, compared with \$1,238,176, it was added.

Kelvinator Appliances Color Trend Shows Pink Losing Ground

DETROIT—Acceptance of 1956 appliances in color to date shows a trend away from pink and the rise of turquoise as a new popular fashion choice. Walter Jeffrey, vice president in charge of Kelvinator sales, announced recently.

"With more than six months of the 1956 model year gone by, a survey of Kelvinator appliances in color shows that Bermuda pink, while still the number one choice, is accounting for a smaller percentage of total color production than it did in 1955," Jeffrey said. "Buttercup yellow, second in 1955, is an even stronger second currently, and surf turquoise, introduced

this year to replace a relatively unpopular fern green shade, has jumped into third place."

Frigidaire Ups 3 Key Men; Copp, Farrell To Retire

DAYTON—Appointment of three key Frigidaire executives and retirement of two others has been announced by Mason Roberts, General Motors vice president and general manager of Frigidaire Div.

Claude W. McMullen, manager of the inspection division, has been appointed to handle special assignments in the general manager's office. Howard H. Bogue, assistant works manager, succeeds him as manager of inspection.

Carl A. Copp, manager of industrial relations, will retire July 1. His successor will be Leonard P. Roberts, now assistant to the general sales manager.

Retirement of A. D. Farrell as director of salaried personnel, effective June 1, also was announced.



FREEZER PLATES
UNIT COOLERS
EVAPORATORS
CONNECTORS
TUBING
COILS

BOHN

For more information about products advertised on this page use Information Center, page 30.

NEW... MULTIPLE FREEZER SHELVES*

by **BOHN**

SHIPPED READY FOR INSTALLATION

**new, low cost, packaged
evaporator reduces cost of
handling and installation**

- **READY FOR INSTALLATION**—no joining or further processing of aluminum required in customers' plants... simply open out and install.
- **PACKAGED TO SAVE**—shipping and handling costs in Bohn and customers' plants are reduced with shelves shipped in compact, easy-to-handle cartons.
- **COLOR UNIFORMITY**—shelves may be color-anodized with no costly, time-delaying color matching in customers' plants.
- **BOHN TRIANGULAR ALUMINUM TUBING**—gives shelves greater primary surface, better air circulation, greater rigidity. Topsides are flat to form a level shelf surface.
- **OPTIONAL TOP PAN LINER**—if your specifications require, a top pan liner may be included as an integral part of unit.

*Pat. Applied For

ALUMINUM AND BRASS CORPORATION

1400 LAFAYETTE BUILDING • DETROIT 26, MICHIGAN

SALES OFFICES: Boston • Chicago • Cleveland • Dayton • Detroit • Indianapolis
Milwaukee • Minneapolis • Moline • New York • Philadelphia • Rochester • St. Louis

Current Literature

Air Conditioning & Refrigeration News, May 21, 1956

Temprite Folder Shows Typical Installations

KEY NO. R-530

BIRMINGHAM, Mich.—Literature, illustrating and describing the new higher capacity remote-type coolers made by Temprite Products Corp. is now available.

A four-color folder gives specifications and shows typical installations.

Williamson Offers Home Heating, Cooling Guide

KEY NO. R-531

CINCINNATI—In connection with the U. S. Chamber of Commerce's designation of 1956 as "Home Improvement Year," The Williamson Co. here has produced a 16-page booklet titled "A Guide to the Wise Selection of Heating and Cooling Equipment."

Included are answers to the most commonly-asked questions on these subjects from prospective homeowners and those interested in home modernization, the company said.

The guidebook describes and

illustrates various types of residential heating and cooling systems available to the homeowner, to help him select those best adapted to his particular needs. It also points out common pitfalls to be avoided in making the selection.

The booklet is written in simple terms, with an "A-B-C" approach for those having little or no previous background in purchasing such equipment.

Tenney Folder Describes Explosion Chamber

KEY NO. R-532

UNION, N. J.—Tenney Engineering, Inc. recently announced publication of a four-page folder describing an "advanced-design" explosion chamber.

Complete information concerning design features, construction, and test procedures involved with the use of explosion chamber is given, along with photographs of the unit.

Simplified ordering data, specifications are also included.

Redmond MicroMotor Catalog Published

KEY NO. R-533

OWOSSO, Mich.—The newly published Redmond MicroMotor Catalog contains detailed information on the complete line of Redmond fractional horsepower electric motors, as well as on Redmond "MonoMotors," blowers, and special products. Included in the 12-page catalog are photographs, diagrams, and product performance data.

Types AY and BY Redmond "Tri-Flux" motors with "Uni-Cast" construction are described, as well as the new line of type CY permanent split capacitor motors.

Manual Tells How To Profit from Classifieds

KEY NO. R-534

PELHAM, N. Y.—New manual issued by H. K. Simon Co., "How to Double Your Business with Inexpensive Classified Ads," contains reproductions of newspaper classifieds that have produced volume business, the company announced.

the manufacturer declared.

The brochure describes the benefits derived not only in original installations, but in servicing.

Amana Tells 18 Ways To Install Central System

KEY NO. R-536

AMANA, Iowa—Eighteen different ways to install self-contained central system air conditioners are described in a new manual just published by Amana Refrigeration, Inc., for use by architects, builders, and contractors, as well as the air conditioning trade.

The 24-page manual uses drawings and diagrams, with brief text descriptions, to present the "where and how" installation facts about Amana's new self-contained, air-cooled systems.

A variety of home installation possibilities, in attics, basements, utility rooms, and crawl spaces are illustrated, in addition to commercial and custom installations.

The manual also describes contents of the installation kits that are available as optional equipment, to help make installation in homes simple and economical.

Fairbanks Brochure Describes 1-Man Truck

KEY NO. R-535

NEW YORK CITY—A new brochure describing the Fairbanks Co.'s new one-man truck that "delivers and installs air conditioners from truck to ground, upstairs or down, and right into customer's window" is now available from the firm.

Shown in a series of cutaway drawings is the operation of the Fairbanks Appliance Elevating Truck A-2 and how it facilitates all phases of air conditioner transportation and installation and substantially reduces labor time.

D-H Issues Data on Coils for Steam

KEY NO. R-537

LOS ANGELES—New one-page Submittal Data sheets on its complete line of air conditioning coils for steam were recently made available by Drayer-Hanson, Inc.

Stressing construction features of seamless copper tubing, aluminum fins, brazing, and casing, the literature is released primarily as a ready-reference for its factory representatives, according to the company, but also as informative data for air conditioning contractors, engineers, and architects.

Full dimensional drawings and data charts are included.

H-M Catalog Describes Turbo-Flo Cooling Coils

KEY NO. R-538

PITTSBURGH—Halstead & Mitchell has announced a new catalog, DE-200, which describes in detail the company's new line of direct expansion cooling coils, using its "Turbo-Flo" finned surface for extra high heat transfer.

The catalog describes the construction of the coils, including tubing, casings, headers, refrigerant distribution, return bends, and valves. Test and dehydration as well as means of specifying special coils are also described.

Tables are devoted to dimensional data, pressure losses, and pressure drop, as well as methods for selecting direct expansion cooling coils.

Primore Issues New Catalog on Valves

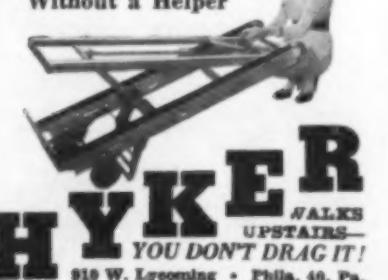
KEY NO. R-539

ADRIAN, Mich.—Primore Sales, Inc. here announces that its new refrigeration valve catalog is now available.

Complete details, application data, and other pertinent information on the many types of valves now used on household and refrigeration units, residential and automotive air conditioners, as well as condensers, evaporators, and receivers, are given in the catalog.

Deliver-Install-Service Air Conditioners

Without a Helper


HYKER WALES UPSTAIRS
YOU DON'T DRAG IT!
919 W. Lycoming • Phila. 46, Pa.

In copper tubing . . . why is PENN the BRIGHT SPOT?

UNIFORM QUALITY The physical characteristics of unvarying PENN quality tubing is vigilantly maintained throughout the model year on each part number from the first to the very last. Order by order, shipments of high quality PENN tubing meet rigid inspection standards on time and this combination pays off all along the line.

DEPENDABLE SERVICE Of equal importance with the quality of the product itself is the reliability of the supplier's word. The ability of PENN to convert orders into basic, believable delivery promises that are faithfully met, has earned for PENN the reputation of Dependability spelled with a capital "D".

FRIENDLY COOPERATION The third most important ingredient to a top-notch association is flexibility of procedure known as cooperation. When the unusual occurs and special needs call for a broader interpretation of the pattern, the "Penn Plus"—friendly cooperation, takes over. It's at this time that PENN proves to be a friend indeed.

Nothing quite matches this Penn trio. PENN uniform quality—PENN dependable trustworthiness and PENN friendly cooperation. Get to know them and you'll agree. Write direct or contact the representatives below in your area listed in the Yellow Pages of the Phone book under Tubing.

BOSTON CLEVELAND CHICAGO DETROIT DAYTON

MANHATTAN

PITTSBURGH

ST. LOUIS

ST. PAUL

PENN BRASS & COPPER COMPANY
ERIE • PENNSYLVANIA • TELEPHONE 3-1164

For more information about products advertised on this page use Information Center, page 30.

Many Dealers Seen To Favor 90-Day Labor Warranty on Major Appliances

ST. LOUIS—"There is a tremendous dealer interest in the establishment of a 90-day warranty period for labor on major appliances, particularly washers," according to A. W. Bernsohn, managing director of the National Appliance & Radio-TV Dealers Association.

Addressing the Appliance Parts Jobbers Association at a meeting at the Coronado hotel here, he said:

"Were you to take a national check of the self-servicing appliance dealers of the country today, you'd find a clear majority in favor of such a change."

Conflict on Jeopardizing Dealer's Advantage over Minimum-Service Stores

"However, whether this is good for the self-servicing dealer and whether it might jeopardize what advantages he has over stores providing a minimum service to customers and operating on price alone, is a different matter. It's because of this conflict that NARDA has not yet taken an official position on the subject."

Other Factors Affecting 90-Day Labor Warranty

Among other factors affecting the 90-day labor warranty, he said, are:

Pro:

1. Automobiles provide only 90 days and factories reimburse dealers for this service.

2. The pattern just grew in the industry without any preset concept at the beginning. It was apparently handed down from the comparatively service-free refrigerators.

3. Dealer profits no longer are comparable to those which prevailed when the year's warranty on labor first went into effect.

4. The sooner dealers can charge for service, the sooner nuisance calls end and service losses are replaced by profits.

Con:

1. Sears is now offering a year's warranty instead of the former 90 days, which may deter the shift.

2. Many dealers are enterprising enough to convert the close customer contact service provides them into additional sales opportunities.

New Type Thinking Presented by Trend

The trend toward factory-controlled distribution of several leading lines of major appliances, coupled with central service in the metropolitan markets, is presenting the dealers with a new type of thinking and, in some instances, forcing a new method of operating on him, Bernsohn noted.

"Dealers in these brands in these markets are finding it necessary to adjust from their traditional role to where they become predominately a sales agency with any franchise protection they possess directly proportionate to the volume they deliver," he stated.

Doubts Noted

"It is most doubtful whether eliminating of dealer responsibility for service to this extent

is good for the industry," he continued.

He predicted that the automotive pattern of one brand per store can be expected to result from the mergers and brand terminations going on in the industry today, although this pattern change will not take place completely nor suddenly.

Times Appliance Co. To Take Westinghouse Name

NEW YORK CITY—Westinghouse Electric Corp. announced recently that its wholly-owned subsidiary, the Times Appliance Co., Inc., will henceforth be known as the Westinghouse Appliance Sales Corp.

The new corporation will continue to be located at 353 Fourth Ave., New York City and will operate in the same area formerly covered by Times.

Norge Sales Jump 32% In Year Ending May 1

CHICAGO—Sales of Norge appliances for the 12 months ending May 1 jumped \$27,000,000 over the previous one-year period, a 32% gain.

Sales for the period reached \$126,000,000 as against \$99,000,000 for the 12 months which ended May 1, 1955. Norge sold more than 1,500,000 home appliances, nearly matching the com-

bined totals of the previous two 12-month periods.

Volume for the year ending May 1, 1954, before Sayre assumed Norge leadership, was \$43,000,000.

Dollar volume for the 1956 calendar year was estimated at \$150,000,000, up 20% from 1955 and 101% from 1954.

In the account, signed by R. C. Connell, Norge vice president of sales, sharp gains in advertising volume and field and dealer sales force were outlined.

Test after Test has Proved...

the SERVICEABILITY of HOUDAILLE'S NEW FINISH ON FREEZER SHELVES and EVAPORATORS OF STEEL



► Every conceivable type of test has demonstrated that in addition to reducing the cost of steel freezer shelves and evaporators, Houdaille's new electro zinc plating and processing facilities produce the most serviceable of finishes.

Tests at 100% humidity and 100°F for over five times as long as commercial standards require, failed to affect the finish or produce signs of corrosion.

Rapid cycle defrosting tests equal to over 4 years of severe usage left Houdaille cooling plates good as new.

Tests for abrasion, bending, scratching, chipping and resistance to acids and chemicals further demonstrated virtual indestructability.

Yes, this new finish combined with the interior cleanliness and other advantages of Houdaille's copper brazed, tube on plate or plate on plate precision construction in steel, offer today's best answer to sales appeal and service-free evaporators and freezer shelves. Our engineering and test facilities are available to cooperate in producing units to meet your exact need.

HOUDAILLE INDUSTRIES, INC.
NORTH CHICAGO DIVISION
1900 FOSS PARK AVE., NORTH CHICAGO, ILL.

Manufacturers of:

Evaporators, Cabinet Cooling Plates
Freezer Shelves and Condensers

Mfrs. Answer Questions at Kalamazoo 'Information Please' Session

KALAMAZOO, Mich.—Here are some of the questions served by speakers during the seventh annual convention of the Michigan Association of the Refrigeration Service Engineers Society here recently and the answers they received:

To Walter Musser, chemical engineer in the Micromet Div., Calgon, Inc., on water treatment in cooling towers:

Q. Where will algae form in a cooling tower?

A. It will usually appear on the distributor pan and will grow until it plugs up the holes. Algae requires sunlight to grow.

Q. Will cleaning acids remove airborne petroleum products such as oil, soot, and tar?

A. You will have to try the acid and see what it will do. If you have an acid resistant tar, the acid will do you no good.

Q. Can you use the Micromet plates in a wet bottle cooler to cure sliming of the coils?

A. We don't recommend it.

Q. Must you have a bleed-off when using the Micromet plates?

A. Yes. Without a bleed line, the plates won't help at all. With a bleed, plates will eliminate 90 to 95% of the scale.

We like to limit water hardness to 40 grains. So if you have more than 20 grains of hardness, I would increase the bleed off to more than the rate of evaporation. If the bleed has been 2 g.p.h., increase it to 3 g.p.h.

Q. How do you determine the rate of bleed off?

A. Manufacturers recommend that bleed off be equal to the rate of evaporation.

Q. Where should the bleed off line be placed?

A. We recommend that it be placed on the discharge side of the pump above the level of the sump. Thus when the tower shuts down, the bleed off stops.

To Jim Mulcahey, vice president in charge of sales, Bush Mfg. Co., on electric defrost systems:

Q. Does electric defrost increase the size of the coil needed?

A. No. Hot gas and electric defrost coils are the same size for the same size evaporators.

Q. Would superheat affect the setting of the expansion valve when coils are equipped with a superheater?

A. No. The superheater is actually part of the coil and requires no special expansion valve.

Q. How about replacing defrost heating elements in close places?

A. (By John K. Campbell, district manager in Bush's Chicago office.) Our standard heating element is rigid. You must have access equal to at least the length of the element on both sides of the case. But if you are in a narrow space and don't have the necessary width, we can supply annealed units that can be easily bent.

Q. With an air-cooled condenser on the roof and the compressor in the basement, what do we do about condensate in the riser? We get liquid condensate in the discharge line dropping back and ruining the valve plate on the compressor.

A. (Campbell) I can't see how you would get enough to bother you unless the discharge

line was too large. A trap in the line or a high side float and bleed to the receiver should cure the problem.

Walk-In Freezer Door Pops Open After Defrost

Q. How do you avoid popping the door open on a walk-in freezer holding -26° F. after the hot gas defrost cycle? We have had a case where so much pressure seems to build up inside the freezer that it will literally blow the heavy door open.

A. (By Einar Hansen of Flint, who asked the question in the first place.) We found that the difficulty was caused by a blast of hot air off the coil which, when meeting the cold air in the box creates such a high air pressure inside the box that it popped the door. We put a time delay switch on the cooling coil fan so that the coil will have a chance to chill down before the fan goes on. The time delay switch also permits the coil to drain completely so that moisture isn't blown around the box.

To Henry Michalski, sales engineer for A-P Controls Corp. on automotive air conditioning:

Q. If a crankcase regulator valve is located near the compressor, what is to prevent the liquid from slugging through to the compressor?

A. The valve should be placed between the evaporator coil and the re-evaporator so that the re-evaporator will have a chance to expand the liquid to a gas before it reaches the compressor.

If liquid is getting to the compressor on a regular refrigeration system, that indicates trouble elsewhere in the system, rather than at the crankcase regulator.

Will Suction Pressure Regulator Control Air Conditioning System?

Q. Will a suction pressure regulator control a car air conditioning system satisfactorily?

A. It would not be too desirable. It would lower the suction pressure to the compressor and produce oil pumping through the system. A crankcase regulator bypassing gas to the suction line would be more effective.

Q. How do you take an auto air conditioning system out of operation during the winter season?

A. There are two ways. First you can disconnect it from the belt at the end of the season. Second, if you use a magnetic clutch, you can use a switch to de-energize the clutch, allowing the drive shaft to turn

(Concluded on next page)

REMOVE SCALE QUICKLY!

WITH ANCO CONDENSER CLEANER



Scale and rust get the bum's rush when ANCO Condenser Cleaner goes to work. This exclusive formula is simply dissolved in the sump while the system is in operation. Within 2 to 15 hours, depending on the thickness of the scale, the tubes are clean and head pressure is down to normal. This superior cleaner is safe for servicemen to use and harmless to equipment. Don't ask for trouble—ask for Anco Condenser Cleaner.

Keep scale and rust from forming with
ANCO WATER TREATMENT



FREE!

WATER TREATMENT MANUAL

A complete booklet on the control of scale, rust and algae in refrigeration and air conditioning systems. No service department should be without a copy. It's yours for the asking.

Kill slime and algae with
ANCO ALGAECIDE



Sold by wholesalers of air conditioning and refrigeration supplies

Anderson Chemical Company, Inc.
BOX 1424 • MACON, GEORGIA



Questions and Answers--

(Concluded from preceding page)

free without turning the compressor.

Trouble Shooting Auto Cooling System

Q. What about trouble shooting an automobile air conditioning system?

A. As far as trouble shooting is concerned, an automobile air conditioning system is a conventional circuit except for the by-pass arrangement. The crankcase regulator should be set at 20 to 25 lbs.

Expansion valves are almost all externally equalized and all are in the 1½ to 2-ton capacity range. Some are non-adjustable, but most have a gas charged element.

With the engine idling, you can put on your gauges to check the system. But put on a big fan to get added cooling over the condenser or you will get ungodly high head pressures.

To test the by-pass control, you need a road test at high speed. Watch for a frosting condition on the coil. If that occurs, get out and adjust the control. Remember that the bypass will vary according to the load condition rather than the speed of the car. The control is only interested in maintaining a 20-lb. crankcase pressure. Speed is not a factor.

(A serviceman from the audience suggested that the by-pass control could be checked without a road test by artificially restricting the air passing over the evaporator coil. Michalski agreed.)

If you use a solenoid valve on the by-pass control, he warned, be darn sure it has sufficient lift to operate against the high pressure differentials you will find on an automotive system. Just any solenoid valve won't do.

To John Bopp of Ansul Chemical Co.:

What's Good Way To Unplug Capillary Tube?

Q. What is a good way to unplug a capillary tube?

A. Laboratory work is being done now to find out what plugs a capillary. It is not just carbon. There are a number of things that plug it. Within the next year, we will have an extensive report on it.

To Paul Hunker, compressor sales supervisor, Brunner Mfg. Co.:



Q. What should be the service engineer's reaction to discount houses?

A. I think the thing wrong with us today is that we have forgotten how to sell. I think the discount house is here to stay because many people will buy according to price. The discount house doesn't try to sell anything but price.

You can beat the discount house because you are on the spot and they can't beat your personality. I defy anyone to prepare an advertisement or a

booklet that will take the place of you.

It's up to you. We've just got to get back to selling.

General Controls Div. Names Pachyn In Sales

GLENDALE, Calif.—Stanley John Pachyn has been named assistant sales manager for the Industrial Controls Div. of General Controls Co., according to J. F. Ray, the firm's vice president in charge of sales.

Pachyn will be located at the General Controls eastern manufacturing plant in Skokie, Ill., it was added.

Penn's Milwaukee office ad-

Penn Controls Moves 2 District Sales Offices

GOSHEN, Ind.—Two district sales offices of Penn Controls, Inc., have moved to new quarters as of May 1, the company announced.

The company's Berkeley, Calif. office is now at 2729 San Pablo Ave., Berkeley 12. Still under the supervision of Marshal N. Duncan, district manager, the office formerly was located at 2806 Eighth St. in that city.

He was named Airtemp factory auditor in 1948. Appointed general auditor in 1952, he became comptroller in 1954.



Exterior of Series 1272 single function control available for either low or high pressure.



Series 1273 dual pressure control. Lockout and manual reset available for either low or high pressure cut-out.

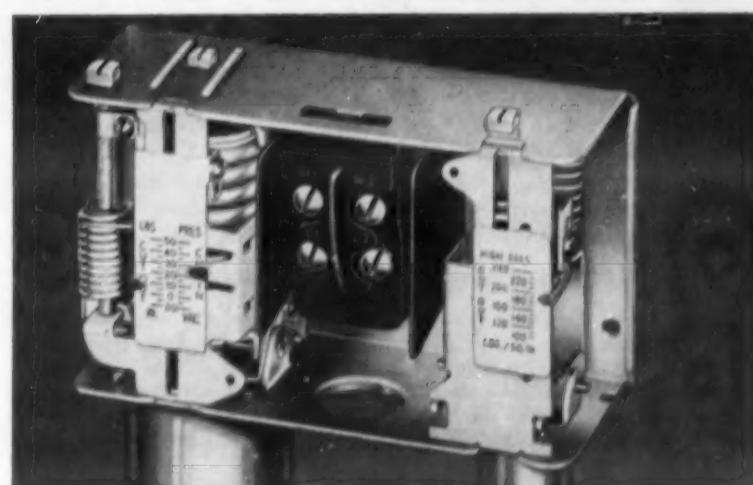
PENN REFRIGERATION CONTROLS ELIMINATE MOTOR STARTERS

Extra heavy duty Series 1272 and 1273 pressure controls have the highest rating in the industry!

Specifically designed for commercial refrigeration and air conditioning jobs, the Series 1272 and 1273 are rated at 3 H.P. for single phase compressors and at 5 H.P. for polyphase compressors.

Thus, cost of contactor is eliminated if motor has built-in overload protection. If motor requires external overload protection, the motor starter can be replaced by the more economical "manual starter." So . . . in either case, these Penn controls save you money!

In addition, the Series 1272 single function and Series 1273 dual function controls meet the most modern maximum test requirements. And, there are features such as . . . self-cleaning, snap-acting contacts . . . direct-reading calibrated scale for simple cut-in and cut-out setting . . . and many more. So, don't settle for less. Get the full story from your wholesaler or compressor manufacturer.



Interior of Series 1273 illustrating sturdy contact block with easy-to-reach wiring terminals.

PENN CONTROLS, INC. Goshen, Indiana
AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING,
GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

What Was New

National Restaurant Show



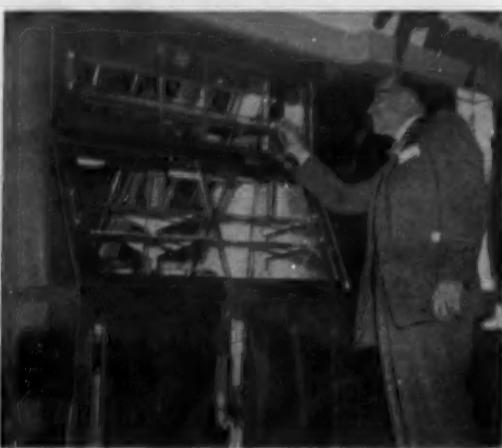
KEY NO. F-536

NEW "CHIPMASTER" ice maker that produces up to 500 lbs. of chip ice in a day is demonstrated by William G. Marshall (l.), Carrier Corp.'s New York district sales manager for ice makers, for Reuben Lipman of Frisch Restaurants, Cincinnati.



KEY NO. F-537

FRIGIDAIRE'S new larger capacity ice maker with separate bins for large and small cubes is studied by Richard Bidwell of Champaign, Ill. (c.), and Earl Correll, Frigidaire's supervisor of direct district sales (r).



KEY NO. F-538

BLOWER COILS FACED in both directions separate the vertical compartments in this 60-cu. ft. reach-in freezer featuring automatic defrosting, Fred Steadman (l.), Herrick Refrigerator Co. representative, advises Francis Weinberg of B & W Restaurant Equipment, Louisville, Ky.



KEY NO. F-539

CEILING COIL provides refrigeration throughout this stainless steel dessert case exhibited by Progressive Metal Equipment Co. Dale Peterson of Peterson Fixture Co., Moline, Ill., notes open shelves to improve circulation.



KEY NO. F-5310

ALL-ALUMINUM 30-cu. ft. self-contained reach-in refrigerator is examined by Frank J. Macknick of Service Supply Co., Sheboygan, Wis. (l.), as Ed. Gaulke, Milwaukee representative for Fogel Refrigerator Co., looks on.



KEY NO. F-5312

SATIN FINISHED, sliding door, 82-cu. ft. refrigerator in McCray Refrigerator Co. booth is shown by G. A. Brandt (r.), Chicago branch manager for McCray to R. A. Spurgeon of Winnipeg, Man., Can.

MORE water cooling sales
than **EVER** before

when you
promote
"REMOTE"
by
Temprite



most versatile
cooler ever designed

Complete with hermetic compressor and either water cooled or air cooled condenser. Simple inlet and outlet connections and standard power hook-up.

Water cooling installations pay off with the kind of profits you're entitled to . . . there's no ceiling on sales, no limit to your opportunities to make money . . . when you promote "REMOTE" by Temprite! Very compact and easily installed for cool drinking water purposes everywhere, for photographic processing, and in many applications throughout industry, such as coolant cooling, jacket cooling, laboratory experimental work, etc.

Temprite's advanced line now features capacities from 5 g.p.h. to 24 g.p.h., serves multiple bubblers if desired. Accurate temperature control, sturdy, long-life construction.

prospects / and profits / everywhere!

Restaurants, Cafeterias, Taverns, Soda Fountains, Drive-ins, Institutions, Schools, Office Buildings, Factories, Hotels, Motels, Hospitals, Public Buildings, Experimental Laboratories, Photo Processing Labs, etc. Many commercial and industrial water and liquid cooling applications, photographic, etc., etc. Cools light oils and some chemicals.

(Approved by Underwriters—5-year warranty protection.)

Temprite Products Corporation
P.O. BOX 72-A • E. Maple Road • Birmingham,
Michigan

Send me complete data on Temprite Remote Coolers.

NAME _____

ADDRESS _____

CITY _____ STATE _____



Airtemp
DIVISION
CHRYSLER CORP
DAYTON 1, OHIO

means

Air Conditioning --

Chrysler means Quality.



KEY NO. F-5313
KOOL KLOSET walk-in, reach-in refrigerator by La Crosse Cooler Co. earns sober consideration of Ken Tyler (l.), of Davidson Associates, Toledo, as La Crosse's L. C. Van Dervort explains features.



KEY NO. F-5317 — **KEY NO. F-5319**
LEFT: From 200 to 250 lbs. of tips or chips can be produced in a day by the Model B-300-B automatic ice maker, R. L. Coons of American Ice Machine Co. (r.), tells P. K. Reger of Reger-Renalt Sales and Service, Kansas City. Exterior is stainless steel.



KEY NO. F-5314
MOBILE FRIGID CABINET with tray guide rack and self-contained compressor catches the interest of E. H. Wallace of the All-State Cafe, Cullman, Ala. (l.), who gets details from Andrew J. Jinoza, sales promotion and advertising manager for Crescent Metal Products, Inc.

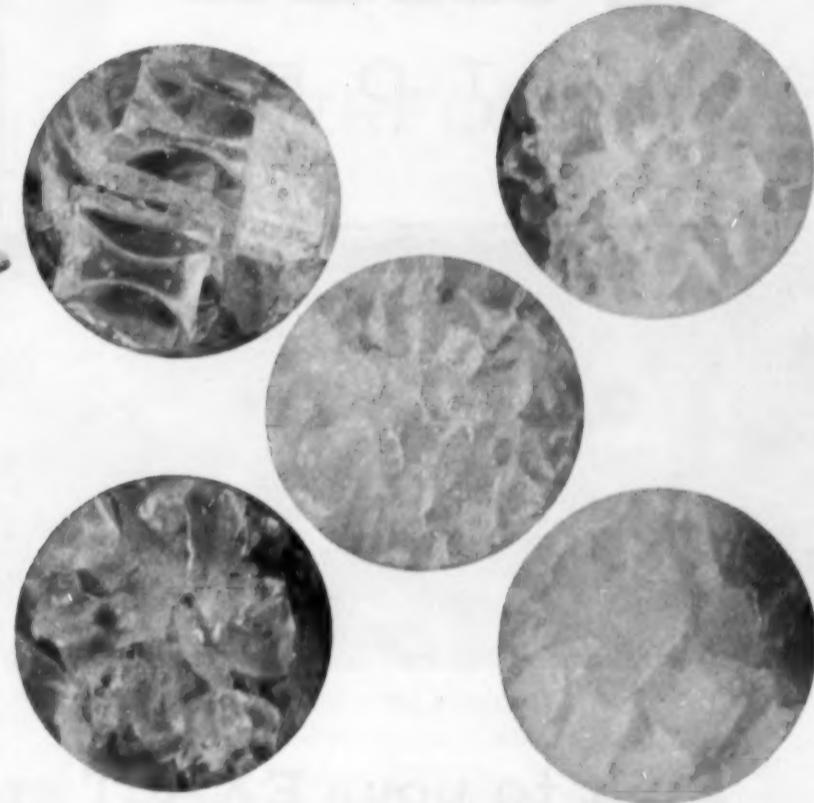


KEY NO. F-5318
NEW EPON RESIN acid and abrasion resistant white enamel covers the interior of the new Tyler 43-cu. ft. freezer, Ed Starke, Tyler Refrigeration Corp. representative (r.) tells W. S. Howard of Martinsburg, W. Va.



KEY NO. F-5320
NEW TEMPRITE WATER COOLING TANK for under counter installations is examined in the Temprite Products Corp. booth by Eugene O'Neil (l.), of J. H. Coker Co., Chicago, and R. W. Gentry, Temprite representative.

It's great to be a Carrier dealer—with five kinds of ice to sell!



Trying to sell one kind of ice to all kinds of ice users is tough sledding. You're better off with two kinds. And with five, you cover the market like a sleet storm.

With Carrier Icemakers and Flakemasters, you can sell prospects any kind of ice they want. You have five kinds of ice to offer:

1. Crystal-clear cubes
2. Coarse-grade crushed ice
3. Medium-grade crushed ice
4. Fine-grade crushed ice
5. Hard, dry, flaked ice

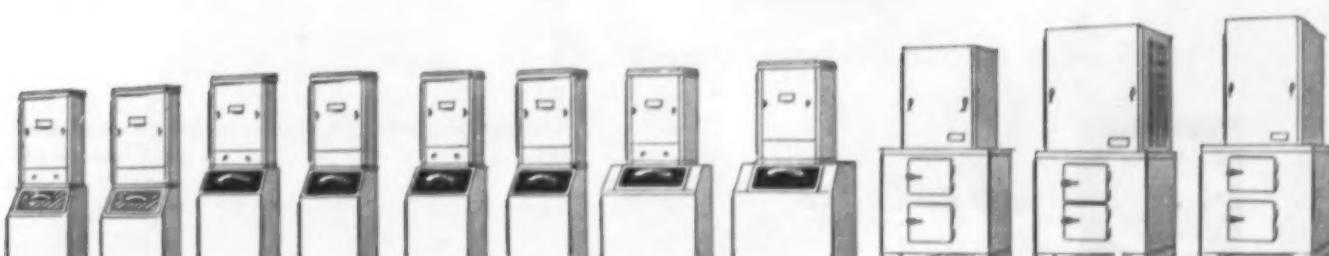
What's more, you can sell the quantity of ice they need.

Not with promises of "up to so many pounds a day." But with certified-in-writing capacities covering every model of Icemaker and Flakemaster, every operating condition.

With five kinds of ice to sell, eleven models of Icemakers and Flakemasters, exclusive Carrier features AND CERTIFIED CAPACITIES, you come closer than any other dealer to CERTIFIED SALES!

It's time to call your Carrier Distributor. You'll find his name in the Classified Telephone Directory. Or write Carrier Corporation, Syracuse, New York.

Carrier automatic ice machines



For more information about products advertised on this page use Information Center, page 30.



KEY NO. F-5316
TIMING MECHANISM that gives an exact amount of milk is used on new United Refrigerator Co. milk dispenser. George Woodie (l.) who designed the mechanism, draws one for Harold Schien, Slattest distributor in Springfield, Ill.

Big 7½-Amp. ¾-Hp. Room Unit Market Seen In East, Midwest Metropolitan Areas

CHICAGO—The lower operating cost of a 7½-amp., ¾-hp. room air conditioner is not the major consideration in the sale of these units, according to E. A. Tracey, general manager of Mitchell Mfg. Co.

Recently returned from a nationwide series of sales meetings with distributors and retailers, Tracey said:

"The one big factor, the one that will sell the units, is that the unit can be plugged into any existing circuit without bringing in additional wiring."

Tracey brought out that the recent du Pont study said 9.3% of all persons queried gave "cost of operation" as a reason for not buying a room unit.

"This is simply a convenient excuse for not buying," he sur-

mised. "In all major areas, the average cost of operating a room air conditioner is less than \$5 a month, below that of a phone."

The big markets for the 7½-amp. units, Tracey said, are in the east and in midwestern metropolitan areas where many people rent their living quarters.

"Before the 7½-amp. unit came along," he said, "these people were reluctant to buy a room air conditioner because they would have to spend an additional \$75 to \$100 for extra wiring."

"This upped the cost of the unit by almost 50%. And because they didn't own their home, they naturally were reluctant to invest in this type of improvement."

Tracey said the 7½-amp.

units give good cooling results in the east and midwest where dehumidifying is just as important as reducing the temperature.

"In the far west and south, however, the units do not move well for two reasons: they have less cooling power than a standard ¾-hp. unit; and the trend in those areas is toward 1-hp. units which will operate only on 230 volts," it was further stated.

Fedders Air Conditioning Names D'Arcy Advertising

MASPETH, N. Y.—Salvatore Giordano, president and chairman of the board, Fedders-Quigan Corp., has announced the appointment of the D'Arcy Advertising Co., New York, as the agency for the Fedders Air Conditioning Div.

"This change is due to a conflict of accounts at BBDO," it was explained.

Union Hardware Named Los Angeles Distributor For Airtemp Room Units

LOS ANGELES—Union Hardware & Metal Co. here has been named wholesale distributor for the complete 1956 line of Airtemp room air conditioners.

The firm's Airtemp product distribution area will cover eight southern California counties and Clarke county in Nevada.

Founded in 1882, Union Hardware & Metal is one of California's largest wholesale organizations, with 580 employees—including 98 outside salesmen, it was noted.

Officials of the company are Edward H. McLaughlin, president; Edward H. McGinnis, vice president and general manager; and Francis F. Regan, director of sales.



SIX adhesive panels in solid colors and patterns are available to redecorate Frigidaire 1956 model window-type room air conditioners to harmonize with room color schemes.

Penn Electric Reports Feb. Room Unit Sales Up 5 Times over '55 Month

JOHNSTOWN, Pa.—Sales of room air conditioners in the northwestern and central Pennsylvania territory covered by the Pennsylvania Electric Co. during February were nearly five times greater than in the same month last year, the utility reported recently.

Room air conditioner sales for the first two months of the year were more than three times those of the same period in 1955.

Dishwasher sales during February were up 80% over last year, clothes dryers up 41%, automatic washers 23%, food freezers 14%, conventional washers 8%, and electric ranges 7%.

For the first two months, both dishwashers and clothes dryers showed a 57% increase over last year, automatic washers a 32% gain, conventional washers a 14% rise, electric ranges 13%, and food freezers 10%, the report continued.

This year, sales of combination refrigerator-freezers are being separated from standard refrigerators so no comparisons with last year are possible, it was explained.

Unit sales of appliances for February and the first two months of 1956 are:

Appliance	Feb.	2 Mos.
Air Conditioners	39	47
Comb. Refrig.-Freezers	496	952
Standard Refrigerators	921	1,856
Food Freezers	356	811
Ranges	704	1,390
Clothes Dryers	762	1,715
Dishwashers	90	171
Automatic Washers	1,205	2,519
Conventional Washers	1,349	2,769

Sutton Names Savre Dist. Sales Mgr.

WICHITA, Kan.—Appointment of Bob Savre as district sales manager for O. A. Sutton Corp. in the Indianapolis territory has been announced by Fred Kaths, sales manager of the Consumer Appliance Div.

Savre has worked in key sales positions with Nesco, Electric Supply of Chicago, and Silex Co. As district sales manager for Vornado air conditioners and air circulators he will be responsible for sales and merchandising of these products in Indianapolis, Cincinnati, Columbus, Dayton, Evansville, Ft. Wayne, Louisville, and South Bend, it was stated.

He will continue to make his home in Hilliard, Ohio.

Sutco
MOTORS



All Sutco employees MUST prove their ability through dexterity test, aptitude test, and preliminary training.

Built to your EXACT specifications...

Over the years, Sutco has proved its ability to design and build—economically and with precision—fractional horsepower motors to meet their customers' every need...and to meet their exact specifications. Whatever your requirements in shaded-pole or permanent split-capacitor, fractional horsepower motors—Sutco can meet them. Refer your motor requirements to our staff of competent sales and product engineers for the most economical recommendations.

Write to: Sutco, Original Equipment Division.



Sutco
ORIGINAL EQUIPMENT

THE O. A. SUTTON CORPORATION, INC., WICHITA, KANSAS

There is something NEW in motors!

Sutco has added to their standard line of shaded-pole motors a complete new concept of permanent split-capacitor motor design...the **Mini-Lap®**...designed to set new standards for minimum motor cost...plus higher efficiency...ratings through $1/3$ H. P.

Sutco Standard Shaded-Pole Motor Ratings Are:

- 2 Pole—up to $1/60$ H. P.
- 4 Pole—up to $1/10$ H. P.
- 6 Pole—up to $1/4$ H. P.

* Patent Pending

Some 'Do's' and 'Don'ts'

Engineer Advises Contractors on Design, Installation of High Velocity Duct Systems

CHICAGO—What a consulting engineer has learned through experience about high velocity duct distribution in air conditioning was reported to the Illinois chapter of the American Society of Heating and Air Conditioning Engineers here recently.

G. C. Savage, engineer in charge of air conditioning for Bevington, Taggart & Fowler, consulting engineer in Indianapolis, also offered some "do's" and "don'ts" on the use of this type of system.

Savage told the engineers why he selected the high velocity type of duct distribution for several installations, the problems encountered during installation, and the results obtained from those now operating.

Some Things That Have Been Learned

Savage stated that several things had been learned about the design and installation of these systems as the number put into operation increased. Some of these findings based upon his experiences are presented below:

- a) There is no substitute for welded ductwork.
- b) Some acoustic treatment is usually necessary in the return ducts if the ducts are short and if the acoustic material can be applied close to the fan.
- c) Consider the heat generated by the fans in the calculation of the heat gains.
- d) Diffusers and supply outlets are selected in the same manner as for low pressure systems. However, it is desirable to use a smudge cone or ring on each one.
- e) The damper or dampers must have essentially straight line characteristics and must shut off without whistling.

Sizing Ducts

f) Sizing the ducts has been found to be best worked out for a maximum velocity of 4,000 f.p.m. and a maximum pressure drop of 1 in. WG per 100 ft. of duct.

g) The supply fans usually turn out to be Class 2, with backward inclined blades. This type of fan has proven to be capable of delivering the required amount of air against the calculated resistance with the least power required.

h) Cooling coils are generally sized for face velocities from 400 to 450 f.p.m. and the heating coils for velocities from 800 to 900 f.p.m. This is especially applicable to hot and cold

deck systems and to dual duct systems.

i) Filters are selected in the conventional manner, but the best type of filters are always specified.

j) Return air fans are used wherever it is practical. By maintaining more nearly equal pressure drops across the outdoor air and return air dampers, the desired percentage of outdoor air can be more nearly achieved.

k) On dual duct systems, dampers are usually installed in the hot and cold duct connections to the plenum. These dampers are controlled by pressure regulators installed at a

distance from the fan on each duct. Their purpose is to limit the pressure in one duct when most of the air flow is through the other.

'Do's' and 'Don'ts' Listed by Savage

Here are some "Do's" and "Don'ts."

1. Don't use rectangular ducts if it can be avoided. Round ducts are usually less costly and will be quieter.

2. Do consider using the commercially available spiral type of duct.

Weld this ductwork at all transverse joints.

3. Don't use 45° branch take-

offs. These act like an organ pipe at some velocities.

4. Do make the take-off at 90° and, to reduce the pressure loss, use a cone shaped exit from the main duct.

5. Don't consider flexible connections between the ductwork and a high velocity outlet as being essential. These flexible ducts are advantageous in aligning equipment, but they are not necessary in the operation.

6. Don't use any volume dampers, balancing dampers, or splitters in any supply ducts after they leave the fan system. If the dampers in the high velocity units are properly designed, all of the balancing can be done at the unit.

7. Don't rely on masonry walls to form part of the plenum unless they are properly reinforced, plastered, and sealed.

8. Do be specific about high pressure plenum construction.

The plenum must be constructed and sealed carefully.

9. Do treat the fan discharge with a good acoustic material.

In conclusion, Savage stated that each job, of course, has to be carefully considered and the advantages and disadvantages of each type of system weighed before the final decision is made.

Carrier-Bock Names Bowie Sales Engineer

DALLAS—Irving Bock, president of Carrier-Bock Corp., has announced the appointment of T. G. Bowie as sales engineer for the Dallas air conditioning firm.

Bowie, a graduate of the school of engineering at the University of Oklahoma, has been in the air conditioning field since 1946. Before joining the staff of Carrier-Bock, he worked for the Carrier Corp. in Syracuse, N. Y. and Dallas.

So Halstead & Mitchell engineers said:

'THIS HAS A BEARING ON COOLING TOWER PERFORMANCE'

Nothing has more bearing on cooling tower performance and life than do tower fan bearings. On them turn the induced draft cooling tower's *only moving parts*.

Announcement by Halstead & Mitchell engineers of a *permanently sealed and lubricated fan bearing* means a bearing so designed as to completely eliminate moisture—and consequent rusting of the bearing balls and races. The *elimination of periodic greasing* cuts your tower maintenance costs to an absolute minimum . . . literally adds years to cooling tower life.

With not a single bearing failure reported from the hundreds of these "new bearing" towers in actual use, Halstead & Mitchell offers you . . . now more than ever . . . the best buy in cooling towers on the market today.

SUPER-QUIET, 4-BLADE FANS, TOO!

There are new fans, too, on Halstead & Mitchell Cooling Towers—deep-pitch fans which operate at much, much lower speeds—actually *cut cooling tower noise level in half*. Sturdy, stainless steel fan blades . . . stainless steel fan shafts . . . make sure your tower will have not only a quiet life, but a long one, too!

For Complete Details, Write for Bulletin CT-584



Halstead & Mitchell

BESSEMER BUILDING, PITTSBURGH 22, PA.



New Bearing available 5 thru 50 Tons

See HOW MUCH YOUR DOLLAR BUYS!

CATALOG

G & E EQUIPMENT SUPPLY CO.

FREE Catalog

VALUE BOOK

INFORMATION PARTS
ELECTRICAL SUPPLIES
MOTORS • **TOOLS**

For more information about products advertised on this page use Information Center, page 30.

They'll Do It Every Time

by
Jimmy Hatlo



Year After Year a Valiant Few Dealers Retrieve Most of the Business

In today's mad rush for VOLUME, the importance of selective distribution too often is forgotten. Yet, concentrating selling efforts through the BEST dealers and contractors in our nation is a well-proved method of gaining high profits for manufacturers.

By intensive cultivation of the relatively few strong dealers in our industry, pioneer refrigeration and air conditioning corporations have prospered. In case after case, 10% to 20% of these local sales representatives do 80% or more of a manufacturer's total sales volume.

Obviously a policy of concentrating promotional and advertising efforts through TOP outlets has tremendous potential for newcomer manufacturers who yearn to succeed in the air conditioning and refrigeration field.

Furthermore, this policy can supply answers to many problems which have stunted the growth of our industry in previous years. When manufacturers instigate a prolonged effort to secure the best dealers and contractors, and keep them loyal, that action builds long-term Goodwill.

Thereafter the rat-races of special price considerations, discounts, shoddy installations, and inadequate service practices don't black-eye a manufacturer's Good Name—as those malpractices have so often in the past.

If carefully cultivated dealers and contractors are sold on the idea of continuing satisfactory relationships with a "good name" manufacturer, willingly they will help build capital gains for the producer to whom they are loyal. Likewise, this human relationship redounds to the credit of the manufacturer's local representative.

Obviously, a mutual program of this type cannot be developed quickly. Once it is soundly established, however, it can provide genuine protection against wet-behind-the-ears competition, and should yield hand-

some profits for every substantial co-operator.

Briefly, selective distribution means selling through fewer and better outlets (strategically located, well financed, experienced) instead of franchising any and every Johnny-Come-Lately.

It also means:

- (1) Lower sales costs, because fewer outlets need be contacted and serviced;
- (2) Smaller credit losses, because established reputations are self-protecting;
- (3) More effective local promotion and advertising;
- (4) Better customer relations, because they're predicated on a long-run basis;
- (5) Slower turnover of accounts, which is healthy for any business.

Stable relationships with the men who sell his dinguses exclusively probably is the greatest boon enjoyed by any manufacturer who sticks to a selective distribution policy.

At any nationally economic downturning moment these personal relationships can minimize the harmful effects of a slowdown, recession, or depression.

Particularly is this you-and-me relationship important in a consumer goods field which (like air conditioning and refrigeration) notoriously is first to feel the effects of a cutback in consumer purchasing power.

Merely because they are presently and relatively small, modest corporations in our industry shouldn't hesitate to bet on a selective distribution policy. Records in our industry reveal that small concerns frequently have matched BIG competitors by concentrating their trade selling efforts on those Few Local Retailers Who Can Do the Most... for them, or for any manufacturer with a good product, ethical policies, and a strong dealer relationship program.

Reading is like depositing money in a savings account. The benefits compound themselves like interest. But, unlike a savings account, you can draw on your interest without ever having less remaining.—E. M. MAGUIRE

Dwight Morrow was once asked the secret of his success in dealing with others. He replied, "I never judge anyone until I discover what he would like to be as well as what he is."—*Ladies' Home Journal*.

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F. M. COCKRELL, Founder

The Conscience of the Industry

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Marcellus, N. Y.

Editor:

I am reading your "Inside Dope" with continued interest and uninterrupted pleasure.

"Lose Weight Boy!" gave me an extra laugh. Perhaps because it reminded me of a similar incident. It goes like this:

A lady, standing in a crowded bus, inadvertently dropped her expensive handkerchief onto the lap of an individual sitting in front of her (apparently not a gentleman and surely not a sales executive).

A fellow near him, noticing it, turned around and in a confidential whisper said: "Sir, your slip is showing!" Whereupon our friend in panic hurriedly tucked the embroidered linen away into his pantaloons.

Now, how do you unzip this snarl?

PAUL G. HEGENT

American Air Curtain Corp.
10408 Manchester
St. Louis 22, Mo.

Editor:

This is in reference to your editorial in AIR CONDITIONING & REFRIGERATION NEWS, "Air Con-

ditioning Blows Ahead With Another New Use."

The "Air Curtain" is here to stay. Some very large doors are now being installed, mostly in new construction. For this reason, it will be sometime before you hear more of these.

We are now making three installations with "Air Curtain" Doors 18' wide. Here we not only need heating, but each door has its own 15-ton water chiller. This does not mean that this is additional store cooling; it will deduct from the building load same as for heating, door service load is eliminated.

One of the important factors of the "Air Curtain" is that it will open up the store fronts—not keep customers out. An "Air Curtain" has just been installed in Europe where the whole front is open, no show windows at all.

Then there is the safety factor. Ask any department store manager or insurance company what the accident problem is and you will be surprised—we were.

ERNEST GYGAX,
President

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration; manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 52 issues.

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450 W. Fort St., Detroit 26, Mich.

Gentlemen: Send the NEWS every week for one year. \$6.00 enclosed
 Bill me Bill Company.

Name.....

Company.....

Street.....

City Zone State

5-21-56

6 Suggestions Offered To Aid Dealers Up Business In National Buyer Sales

DETROIT—Thirty per cent of an air conditioning dealer's business can come from national buyer companies, Frank Purcell, general manager of Carrier Corp.'s national buyer division, told dealers here recently.

He pointed out that this business can come to dealers without any sales effort on their part, but there are many things they can do to help their manufacturer's national buyer office secure this business.

Purcell said that Carrier hopes to do \$18 million in national account business this year.

National account business is good business, Purcell declared. National buyers pay promptly, they buy on a year-round basis, there is no cost to the dealer, and they make other merchants in the locality get on the air conditioning bandwagon.

But, he warned, national buyers are tough buyers. They are

not push-overs.

They are very price conscious and sticklers for keeping a promise. They have to be, he added, for they can suffer great monetary loss if a promised installation is not made in time.

Here is how dealers can help their national buyer office:

They can bid promptly when asked.

They can engineer smartly.

They can price jobs realistically, keeping in mind they have very little sales expense or overhead on a national job.

They can complete the job on schedule as promised.

They can perform service promptly when required.

They can pass on tips of new planned openings to their national buyer office.

40-Story Bldg. To Be Air Conditioned by 3,480 Tons of Cooling

NEW YORK CITY—The new 40-story Tishman building at 666 Fifth Ave. here will be air conditioned with equipment providing 3,480 tons of cooling capacity, it has been announced.

Chilled water will be furnished for the 2,700 high pressure induction window units by two York 1,540-ton, "Freon-12" centrifugal compressors located on the building's top floor and a single 400-ton York "Turbomatic" compressor in the basement.

Tishman Realty Co. is owner and general contractor for the building, which was designed by Carson & Lundin, architect. Consulting engineer is Cosentini Associates while Raisler Corp. is the mechanical contractor.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

National Warm Air Heating & Air Conditioning (NWAHACA) Technical Conference

May 24-25, Edgewater Beach hotel, Chicago

American Society of Refrigerating Engineers (ASRE) Summer Meeting, June 3-6, Cincinnati

National Association of Retail Grocers, June 10-14 Shrine Auditorium and Exhibition Hall, Los Angeles

Edison Electric Institute (EEI) Annual Convention June 4-6, Atlantic City, N. J.

National Association of Electrical Distributors (NAED) Annual Convention June 10-14, Ambassador and Chelsea hotels Atlantic City, N. J.

National Association of Plumbing Contractors (NAPC) Annual Convention and Exposition June 11-14, Convention Hall, Milwaukee

National Oil Heat & Air Conditioning (NOHAC) Exposition June 11-15, The Coliseum, New York City

American Society of Heating & Air-Conditioning Engineers (ASHAE) Semi-Annual Meeting June 18-20, Shoreham hotel, Washington, D. C.

Most powerful help a dealer can give himself to increase sales and income in air conditioning



Correspondence Sales Training Course in Commercial and Industrial Air Conditioning

Here's something unique in the way of opportunity for dealers and their salesmen:

A Success Course in a timely field—Packaged Air Conditioning. Your teacher? General Electric—the name that signifies both Success and Packaged Air Conditioning. You'll get new dimensions in sales training based on General Electric's field-tested methods—and that means new dimensions in income for you.

In giving this course, General Electric believes:—IF A MAN CAN SELL he can be taught air conditioning—IF A MAN KNOWS AIR CONDITIONING he can be taught selling—IF HE KNOWS NEITHER he can be taught both—IF HE KNOWS BOTH you can make him tops in the field.

Whether you currently handle General Electric products or not, you are eligible to apply for enrollment in the course. We think this course will prove a tonic in success for you. Only \$7.50 for 8 lessons—less than a dollar a lesson.

Get application for enrollment now from your local G-E Packaged Air Conditioning distributor or mail coupon below

Retail Sales Development
General Electric Company
Commercial & Industrial Air Conditioning Dept.
5 Lawrence Street, Bloomfield, N. J.

Please send me, without obligation, your application for enrollment for General Electric's Packaged Air-Conditioner Correspondence Sales Training Course.

Name _____

Address _____

City _____ Zone _____ State _____

I am am not an authorized G-E Packaged Air Conditioner dealer.

8 POWER-PACKED LESSONS IN THIS GENERAL ELECTRIC COURSE

1. Sales opportunities and customer benefits.
2. The General Electric Packaged Air Conditioner.
3. How to make an application survey.
4. How to make a cooling-load estimate.
5. How to find prospects and prepare proposals for them.
6. The Sales Presentation.
7. Shortcuts in selling air conditioning.
8. How to apply G-E Packaged Air Conditioners.

PLUS: A copy of General Electric's dynamic visual selling aid—"The Machine That Makes Money".

YOU WILL RECEIVE UPON COMPLETION OF COURSE:

1. A handsome parchment certificate suitable for framing.
2. Handy 8-ft. steel tape measure complete with attractive leather case.
3. An opportunity for a profitable career selling packaged air conditioning to stores, offices, factories and institutions.

For more information about products advertised on this page use Information Center, page 30.

ASPIR-JET
SPRAY NOZZLES RAISE
TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as 1/2 pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.

Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this astounding new product, wire or write.

THERMAL AGENCY
National Sales Agents
1515 DALLAS • HOUSTON, TEXAS

'55 Frozen Fruit, Vegetable Pack At All-Time High

WASHINGTON, D. C.—Pack of frozen fruits and vegetables for 1955 reached an all-time record 20% higher than 1954, it was announced recently by the National Association of Frozen Food Packers here.

The frozen food industry's pack totaled 1.8 billion lbs., a figure contained in the annual year-end production summary compiled from reports submitted by the frozen food industry.

More than 1.1 billion lbs. were included in the pack of frozen vegetables, 17% above 1954. The fruit pack, though smaller, says NAFPP, showed an even higher percentage gain. It climbed 26% over 1954 with 660 million lbs.

Peas Lead Vegetables

Perennial leader peas again topped the field with 231 million lbs. packed, a new record almost 12% greater than the year before. Potato products comprised the second-highest vegetable pack last year (principally French fried potatoes). This rose 51% above the preceding year and 82% higher than 1953.

Two other frozen vegetable packs totaled over 100 million lbs., according to the report. Green and wax beans, in third place, totaled 121 million lbs., a decrease 2% from 1954. Spinach, which showed a 65% rise over the previous year, went over the million lb. mark for the first time with slightly more than 110 million lbs.

Biggest percentage gain among frozen vegetables was shown by cauliflower which jumped 135% higher than 1954 with 40 million lbs. packed.

Strawberries Seem To Be Favorite Fruit

Strawberries led the frozen fruit pack according to the usual pattern the report shows. Almost 273 million lbs. was packed, mostly on the west coast. This was up 23% over 1954. Together with RSP cherries, strawberries comprised more than 58% of the total.

Frozen cherries leaped 32% with a total pack of 114 million lbs. Most are packed in large containers for bakeries, ice cream manufacturers, etc.

Here is the 1955 pack summary:

PRODUCTION OF FROZEN FRUITS AND VEGETABLES* (In millions of pounds)

Year	Fruits	Vegetables	Total
1943	194.6	152.5	347.1
1948	187.3	207.9	395.2
1944	233.9	237.1	561.0
1945	427.0	308.0	735.0
1946	519.1	450.0	969.1
1947	343.5	346.3	689.7
1948	369.7	446.4	816.1
1949	354.0	563.5	917.5
1950	472.2	587.1	1,069.3
1951	415.9	770.0	1,185.9
1952	430.3	895.7	1,316.0
1953	542.0	1,103.3	1,645.3
1954	523.0	974.6	1,497.6
1955	659.7	1,139.6	1,799.4

*Exclusive of frozen juices.

Source: Based on reports of individual packers collected and compiled by the National Association of Frozen Food Packers.

Market Designed for Sales Appeal Convenience and Easy Reloading

BROOKLYN—A completely air conditioned supermarket with the latest in refrigeration equipment, designed, engineered, and fully equipped by Ideal Store Fixture Co., Inc., was opened here recently.

Owned and managed by Irving Behrman, the Sirv-Way Food Store located at 258 Brighton Beach Ave. has a selling area of 5,500 sq. ft. Designed for customer ap-

peal, according to Ideal, and for convenient shopping, and quick reloading of cases and shelves, the new market has:

32 linear feet of single-duty frozen food cases with canopy;

40 linear feet of single-duty self-service meat cases with canopy;

24 linear feet of double deck dairy cases;

30 linear feet of double-duty vegetable cases with canopy;

206 linear feet of gondola display cases; 42 feet of wall shelving; 6-ft. egg stand; 22 feet of produce window display; 8 by 16-ft. produce island display case; 4 checkout stands; several walk-in coolers; and a meat cutting and wrapping room.

Other store features include an appetizer specialty department in the front and a service dairy department at the rear. New porcelain metal checkout slides have plastic rollers.

Re-Strib-Co Opens as Denver Wholesaler

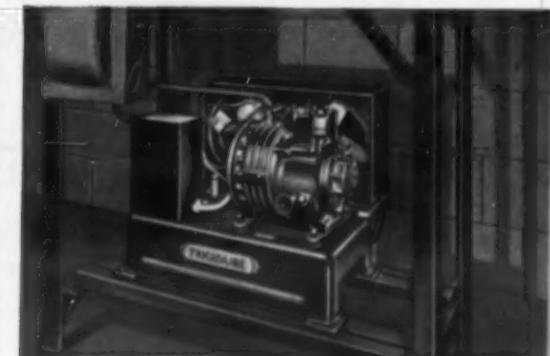
DENVER—Opening of Refrigeration Distributors Corp. as equipment, parts, and supplies wholesaler here was announced recently by its manager, Bill Lazear and Lee Bullock.

The firm, to be known as "Re-Strib-Co," is located at 500 Klamath St. Telephone number is Amherst 6-2303.

The firm is affiliated with Refrigeration Distributors Corp. of Salt Lake City and Boise, Idaho.



KEEP CUSTOMERS COMING...with Frigidaire Air Conditioning. Let your Frigidaire Dealer prove what low-cost "custom cooling" can do for your business! Self-contained and remote systems, including one just right for your needs.



INCREASE THE DESIRE TO BUY... with attractive displays in Frigidaire Frozen Food Merchandisers. Open glass-top and glass-front models invite self-service, promote impulse buying that means extra profit for you.

PLEASE CUSTOMERS. EMPLOYEES... by providing the convenience of a Frigidaire Water Cooler that is always ready with the finest, most refreshing drink of water ever enjoyed. A complete line of bottle and pressure models.

PROTECT PROFITS... at lowest cost with refrigeration powered by Frigidaire Compressors. Safe, dependable operation. Protect food quality, prevent loss of sales and profits due to spoilage.

Industrial Applications, Existing Structures, Replacements Seen To Provide 3 Big Air Conditioning Markets This Year

DETROIT—The three big markets for commercial packaged air conditioning this year will be in industrial applications, in existing structures, and in replacements, Dave Berend, Cleveland district engineer for Carrier Corp. told dealers here recently.

Berend looks for the industrial market—cooling for production spaces rather than

offices—to break open this year. He said packaged units are particularly applicable because they can be easily moved from one area to another as production arrangements are shifted.

Existing office buildings, hotels, and other commercial structures are now being forced to air condition in order to keep up with competition, he noted. By using packaged units, man-

agement can do the job floor by floor and with a minimum of disruption for tenants.

The replacement market is developing rapidly, Berend noted. Packaged units have been on the market since 1933. Many have seen years of service and are ready for replacement.

"Owners of air conditioning equipment are your best customers," he said. "They know General Controls."

the value of air conditioning and quality equipment and good service."

He estimated this market at about 30,000 units.

Berend told dealers that Carrier has prepared a Fair Weather Days promotion and an investment analysis form to help sell packaged equipment.

General Controls Div. Names Representative

GLENDALE, Calif.—Henry L. Bryne has been appointed field representative for the industrial controls division of

Heating, Conditioning
Design Should Include
Attic Ventilation, Says
Consulting Engineer

E. LANSING, Mich.—When designing a combination heating and cooling system for a building, make sure that there is forced ventilation in the attic, E. B. Root, Detroit consulting engineer, advised heating and air conditioning dealers attending a warm air heating and air conditioning conference here.

Even with three or four inches of insulation in the ceiling, it will absorb heat all day and radiate it into the conditioned space all night if you don't ventilate the attic with at least an exhaust fan, he said.

He advised his audience that the two essentials of design needed before the heat gain and loss can be calculated is a survey of the structure and a survey of the type of windows.

Often the architect will fail to specify the type of sheathing in the walls, he said. "Don't take a chance. Find out. The thickness and type will make a great difference in the heat load."

If the house is already constructed and the owner doesn't know if the walls are insulated, he advised, figure on sheathing in a frame house and celotex in a brick veneer house.

It is also important to determine the type of shading that will be used and the direction the building faces before calculating for heat loss. Another important factor is the use to which the building will be put. People eating and drinking, he noted, will produce a great deal more body heat than the same number of people sitting and listening to a lecture.

Noting the growing need to figure for both heating and cooling, particularly in commercial buildings, Root said that every building that he has designed during the past year has specified heating, cooling, and electrostatic air cleaning.

Houston Air Conditioning Firm Moves to New Bldg.

HOUSTON, Texas—The Charles Smith Air Conditioning Co. has moved into a new and larger location at 2312 Bissonnet. The six-year-old firm which specializes in central system residential and commercial air conditioning was formerly located on S. Shepherd. The new quarters contain 2,000 sq. ft. of floor space.

Charles Smith, founder of the firm, has been in the air conditioning field for 14 years. James W. Kerr, became a partner in the firm last year.

PRESSTITE MASTIC SEALERS

- Seal seams
- Deaden sound
- Bulk, bead, tape or semi-liquid
- Apply by hand, spray or flow

See your wholesaler or WRITE

PRESSTITE ENGINEERING CO.
3774 CHOUTEAU AVE. • ST. LOUIS 10, MO.



KEEP 'EM BUYING...with Frigidaire's sparkling, clear ice cubes or cubelets that make food and drinks more appetizing, more desirable. Compact models of Frigidaire Ice Cube Makers produce up to 200 and 450 lbs. of ice per day.

GO FRIGIDAIRE

One or more of the Frigidaire products shown on these pages can give your business a "boost" that will mean greater traffic, increased sales, increased profits, improved customer and employee relations, and lower operating costs.

WANT PROOF?

Your Frigidaire Air Conditioning and Commercial Refrigeration Dealer can tell you in dollars and cents how these products can be used to your advantage. It won't cost you one cent to find out. It may be costing you dollars not to know. Call your Frigidaire Dealer today—he's listed in the Yellow Pages. Or write

FRIGIDAIRE Division
General Motors Corporation, Dayton 1, Ohio



SAVE TIME AND MONEY... with dependable Frigidaire Reach-In Refrigerators that put more usable refrigerated space at your finger tips. "Flowing Cold" protects freshness—guards against food losses.

For more information about products advertised on this page use Information Center, page 30.

Giant Bldg. Needed as Wholesaler Widens Unitary Equipment, Parts Sales

RICHMOND, Va. — Recent voted to the parts department, move of Refrigeration Supply Co., veteran parts wholesaler, to new quarters at 1221 Admiral St. here, gives this firm what is possibly the largest building occupied by any independent wholesaler.

"We had to move to keep up with the expanding industry," comments Walter Booth, who with his brother Edward, operates the firm. "Years ago we were satisfied with the parts and pieces business, but there's less and less of that as more unitary equipment comes on the market. So we're handling more and more unitary equipment ourselves as wholesale distributors," explains Walter Booth.

In the firm's new quarters it has a total of 18,000 sq. ft. on one floor, some of which is de-

Besides two truck docks, Refrigeration Supply now has its own railroad siding, and almost unlimited parking space. The site covers nearly an acre.

One might judge from the above that Refrigeration Supply is located on the outskirts of town, but actually it's very close to the heart of downtown Richmond, being just a half a block off one of the main thoroughfares and close to the site of a proposed expressway that ultimately will run through the center of the city.

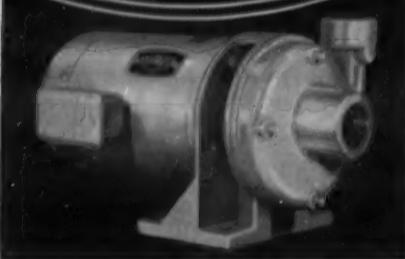
"Customers tell us own new location is much easier to get to, and there is none of the parking problems that handicapped us in our former location," the Booth brothers say.

NAME YOUR AIR CONDITIONING JOB!



STA-RITE

PUMPS install easily
cost less!



STA-RITE PRODUCTS, INC.

702 S. Eighth St., Delavan, Wisconsin
Los Angeles, Calif. • Chamblee, Ga.

IN CANADA: STA-RITE PUMPS (CANADA) LTD., AJAX, ONTARIO

Ask your wholesaler. And
write for copy of new
bulletin describing Sta-Rite
Air Conditioning Pumps.



It's faster, easier, less expensive to install Sta-Rite Type AC pumps. These pumps are small, easy-to-handle. Because you can rotate the discharge outlet; there are no "fitting-in" headaches. Install—and forget service worries, too. Why? Bronze impellers; full-power motors; leak-proof seal. Best of all try this one for price.

Parts Dept. Kept Apart From Other Operations

The "city sales" or parts department, which takes up 5,600 sq. ft., is kept more or less separate from the rest of the firm's operation. There's considerable display area in front of the L-shaped steel counter which runs 42 ft. long.

Steel shelving spaced with wide aisles is used throughout, giving a neat-appearing and efficient air. Ends of the shelving, which face the back of the counter, provide space for display boards of tools, etc.

Most attractive and ingenious display, however, is achieved through a 4-ft. high "strip" of

peg board which extends full width behind the counter at the ceiling. By using the almost unlimited variety of mounting brackets available for peg board, all types of products can be easily displayed here.

Change Displays On Peg Board

"The peg board itself is very inexpensive, and we hope we are able to change the displays frequently," says Walter Booth.

Cleverly concealed behind the peg board also is the duct supplying conditioned air the year around to this department for "spot cooling" or "spot heating" the counter area.

The parts department, includ-

SOME idea of the size of the new quarters of Refrigeration Supply Co. in Richmond, Va. can be gained from this partial rear view. Note two truck loading docks. There's also a railroad siding, and, obviously, plenty of parking space for customers.



LONG counter in parts department is divided into heating, refrigeration, and washing machine parts sections. Peg board behind counter permits attractive display of products.



SMALL, but well equipped shop run by Sol Linfield, makes repairs on wholesale basis for refrigeration and heating contractors.

ing the counter, is set off into three sections: one for refrigeration and air conditioning, one for heating, and one for washing machine parts.

Refrigeration Supply Co., which was organized 20 years ago, first took on washer parts just before World War II, but this didn't really start to grow until the automatic washer became so popular in recent years, says Walter Booth.

"We got into the heating parts business about eight years ago in hopes of broadening our sales," he adds. "So many refrigeration men here were also taking care of heating, and, of course, the refrigeration controls people were in the heating field, too."

Refrigeration Becoming Year-Round Business

"Heating has helped level off our business," Booth declares. "Refrigeration had been quite seasonal. However, with the growth of air conditioning, refrigeration is getting to be more of a year-round business. And by the same token, a lot of heating work is now done in the summer, it seems. The washer parts business is pretty even throughout the year."

"Instead of out business being filled with peaks and valleys over a year's period, it's pretty much leveled up. They're just hills now," Booth says.

Refrigeration, Conditioning Parts Lead Other Sales

Refrigeration and air conditioning sales still lead in the parts department, Booth reveals, representing about 40% of the total volume. Heating, however, now accounts for 35% while washer parts present 25%.

The filling in of the valleys in this type of business offers

(Concluded on next page)

Only DFN
FILTER-DRIERS
provide
Double Filtration!

**RESULT: Clean desiccant--full
strength drying--longer protection**

Tests showed over 80% of driers never reached full drying capacity due to contamination of desiccant by foreign matter. Lacking inlet filtration, the desiccant acted as a filter—became dirty, clogged, inefficient.

This cannot happen with DFN Filter-Driers, because filters do the filtering—desiccants do the drying. Size of filters and quantity of desiccants are proportioned to the area of the drier for maximum effectiveness.

Complete range of DFN Filter-Driers available with PERMAGRAN, Silica Gel or Activated Alumina at leading wholesalers everywhere.



The McIntire Company, Livingston, N. J.

DRIERS • FILTERS • STRAINERS



Since 1925

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MARSH
Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D, Skokie, Ill.



PLENTY of room in receiving and shipping department facilitates mail order operations for Refrigeration Supply. Pictured here are Frank Magri, W. J. Miles, and Clinton Farley.

Supply Firm Expands--

(Concluded from preceding page)
several advantages, according to Booth.

Maintain Same Force All Year Round

"For example, we used to have to pick up extra help for the summer, which is of questionable value. Now we maintain the same force all year around. While it is true that the countermen have to specialize to a considerable degree, we want them to have some knowledge at least of other fields," he says.

"If we have a furnace man in, for example, to explain features of a new product, we have all the men listen, not just the heating men."

Chief Concentrates on Refrigeration, Conditioning

Walter Booth himself, a serviceman before he got into the parts wholesaling business, tends to concentrate on the refrigerating and air conditioning side of the business. Edward Booth oversees the washer parts business and general office management. Harvey Sharp directs the heating end.

Altogether Refrigeration Supply numbers 29 employees, including three outside salesmen.

Adjacent to the parts department is the general office area and display floor for unitary equipment. Directly behind this area is a large room for shipping and receiving (the firm does an extensive mail order business), a large room housing literature and promotion activities, and a smaller room fitted out as a shop for wholesale repair work.

Shop Kept Small

"The shop is purposely kept small so customer's won't ask us to take in complete systems," explains Walter Booth.

Though small, the shop is well equipped with power tools, testing, and calibrating instruments. Operated by Sol Linfield, the shop repairs open com-

pressors and components for contractors and servicemen, silver solder coils, and performs similar operations that the average serviceman isn't equipped to do in the field, recalibrates oil level float valves, etc.

The large warehouse section in the rear of the building has

TURNOUT for Refrigeration Supply's recent formal opening exceeded expectations of Edward and Walter Booth, who soon afterwards started analyzing registration cards.



a truck dock on one side and a Janitrol duct heater is ready to serve the offices.

The parts department will be cooled by a system involving two 5-hp. Copelametic units connected to a Kramer Trenton air conditioning unit. Latter has a split coil for cooling and heating.

To facilitate warehousing operations, the company employs a gasoline-driven fork lift truck. Before this summer rolls around both the offices and the parts department will be air conditioned. A 7½-ton Brunner packaged unit combined with a

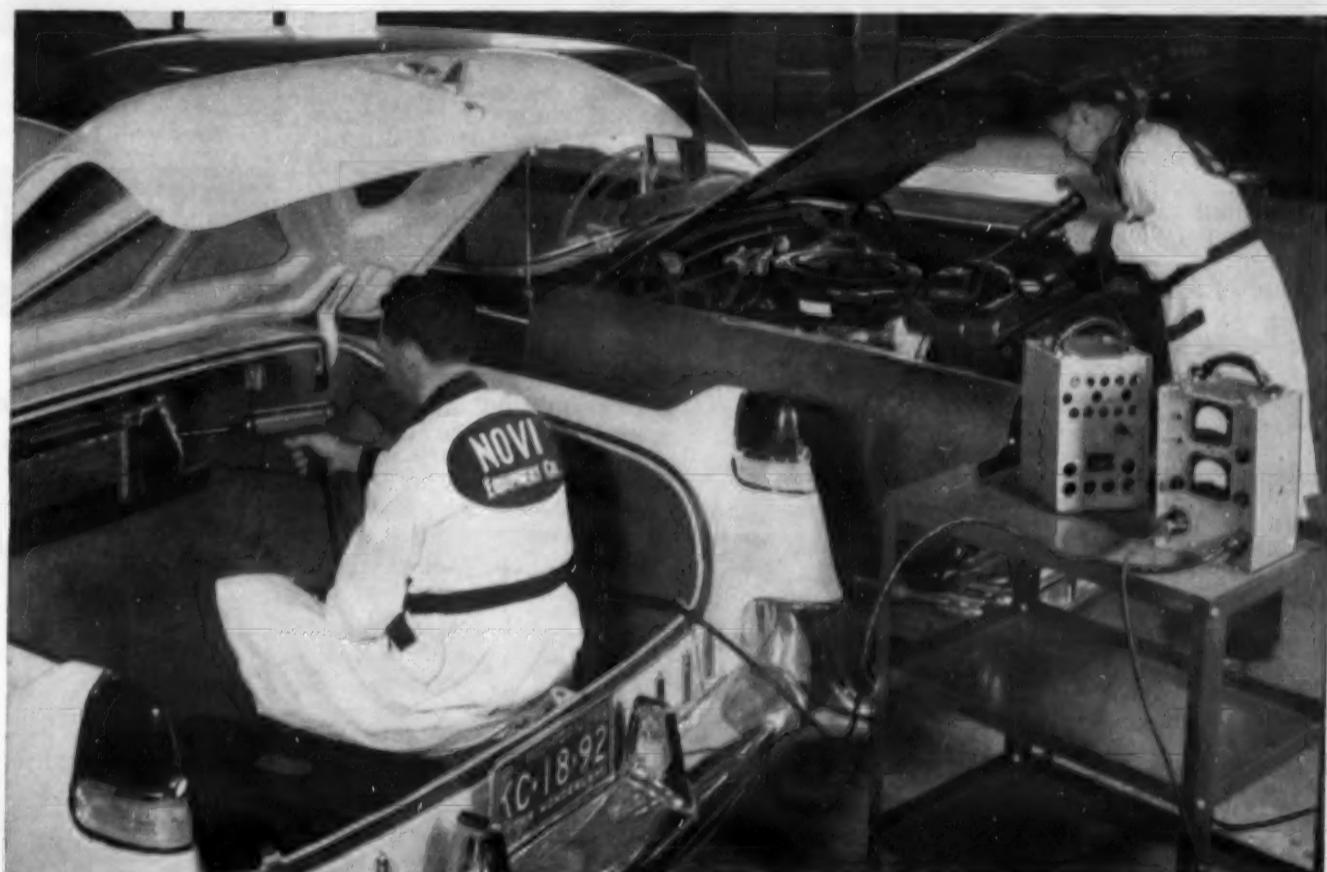
Marshall Refrigeration Names Batanoff In Sales

TORONTO, Ont., Can.—Wm. J. A. Marshall, president of Marshall Refrigeration Co., Ltd., announces that George Batanoff has joined the firm's sales staff as sales engineer.

Batanoff had been associated with C.G.E. for the past 13 years in such positions as manager, Commercial Refrigeration Section, and sales engineer specializing in air conditioning, heating, and refrigeration sales and application.

Marshall said this new association will enable the company to offer customers a qualified engineering service.

Marshall Refrigeration is a wholesale supply house, with offices in Toronto and Hamilton, dealing in air conditioning, refrigeration, and heating equipment and supplies.



RAPID, ACCURATE CHECKS ARE MADE ON AIR CONDITIONING SYSTEMS BY NOVI EQUIPMENT CO. SERVICEMEN WITH G-E LEAK DETECTORS

ON NOVI CO. AIR CONDITIONING UNITS . . .

Service Costs Cut 85% with G-E Leak Detector

"85% of our service repairs on auto air conditioning units were due to loss of Freon* at a cost of approximately \$5.00 per repair," says Mr. Lewis W. Welch, president of Novi Equipment Company of Novi, Michigan. "Since we adopted the G-E leak detector as a standard item in our repair kits, complaints have been reduced to almost nil. We are in the process of equipping all of our 90 factory installation centers with G-E leak detectors to assure that our customers will receive the best possible initial installation."

Like Novi Equipment Company, you can benefit from these outstanding features of the General Electric Type H-1 leak detector:

SIMPLE IN OPERATION, the detector will locate leaks in any system which contains a halogen compound, or into which such a compound may be introduced as a tracer.

EXTREMELY SENSITIVE, the detector will detect a leak as small as 1/100th ounce of Freon* a year.

LOW IN PRICE, the detector costs only \$604.50** complete. For more information contact your nearest General Electric Apparatus Sales Office or write for bulletin GEC-233 to Section 585-30, General Electric Co., Schenectady 5, N. Y.

*Registered trade-mark, Kinetic Chemical Division of E. I. DuPont de Nemours & Company.

**Manufacturer's suggested retail price.



MANY APPLICATIONS are possible with the General Electric Type H-1 leak detector. Lightweight and portable, it also features audible leak indication.

GENERAL  **ELECTRIC**

For more information about products advertised on this page use Information Center, page 30.

Carrier To Make Cooling Equipment, Other Items In West Coast Plant

SYRACUSE, N. Y.—Construction by Carrier Corp. of a \$6 million west coast plant for the production of air conditioning equipment, furnaces, and water heaters will begin this year, it was announced by Lyle C. Harvey, senior vice president of Carrier.

With an area in excess of 1/2 million square feet, the new manufacturing, engineering, and office facilities will be located on a 68-acre plot at Puente, Calif., 18 miles east of Los Angeles.

Provide New Facilities For 2 Growing Divs.

The plant will provide expanded facilities for the rapidly-growing production needs of the Day & Night and Payne divisions of the corporation and, in addition, will produce certain types of equipment for other Carrier divisions, it was explained.

William J. Bailey, Carrier vice president and general manager of the divisions now located at Monrovia, Calif., will be in overall charge of the new plant when it is constructed.

He pointed out that increasing demand has already forced the rental of considerable outside production space in addition to the 300,000 sq. ft. of facilities currently in use at Mon-

rovia for civilian production purposes.

Bailey stated also that the present operations of the Monrovia Aviation Div. will continue at the Monrovia site and the Spectrol Electronic Div. will remain at nearby San Gabriel, Calif.

Since the Puente site is only 10 miles from Monrovia, it is anticipated that virtually all employees will transfer to the new plant when it is completed in 1957.

The tract of land acquired by Carrier was formerly part of the Fred H. Bixby ranch, which is now undergoing a diversified industrial growth. Located on the Anaheim-Puente Rd., it is bounded on one side by the Union Pacific and on the other by the Southern Pacific Railroad.

PLANT PURCHASE SITE PART OF \$18,000,000 EXPANSION PROGRAM

Carrier purchased the plant site last fall as part of its immediate expansion program involving the expenditure of approximately \$18 million, it was explained.

Of this total, \$12 million is to be spent in Syracuse, N. Y. for a new central administration building and research and production facilities.

Theater Air Conditioning Called Versatile

4-Step Control Tandem Units Operate When House Fills, Outside Temperature Rises; Breakdown Chances Reduced

JACKSONVILLE, Fla.—Unusual versatility is claimed for an air conditioning system installed in the 1,200-seat Roosevelt Theatre here.

According to Leonard Cohn, United States Air Conditioning Corp. Florida representative, the 60-ton system uses the lower halves only (containing compressor, condenser, controls, cooling coil, and filter) of eight 7 1/2-hp. UsAirco packaged air conditioners and a single large blower.

Cohn says the system provides four-step control of cooling capacity, as the units operate in four pairs of 15-hp. each.

Units Operate As Needed

"When the theater is only partially occupied or the weather is mild, only one pair of units need operate," he explains. "As the theater fills up or outside temperature rises, additional capacity, as required, is automatically provided."

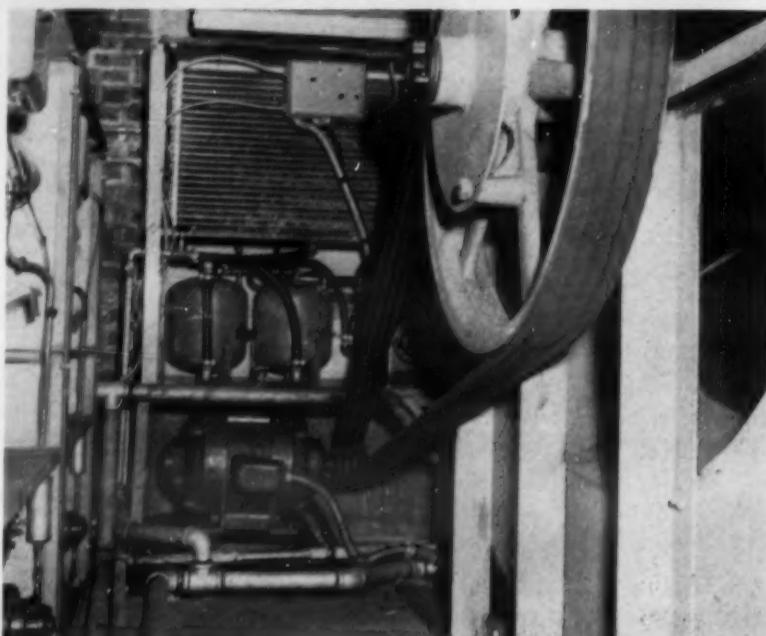
The use of only the exact required amount of cooling provides a positive control of humidity as well as temperature since some of the equipment is in operation at all times, it was pointed out. The four-step control "also results in economy of operation with the utilization of only that capacity which is needed at any time."

52 1/2 Tons of Cooling Remain If One Unit Breakdown

The danger of breakdown of the cooling system is virtually eliminated, Cohn declared, pointing out that in the event of the temporary failure of one unit, 52 1/2 tons of cooling capacity are still available.

The units are located in an equipment room which serves as a return air plenum. The conditioned air is delivered from the units to the theater in a single main supply duct by the double-inlet double-width UsAirco blower. Three circular Anemostat ceiling diffusers distribute the air to the conditioned area.

The system was installed by Simons Electric Co.

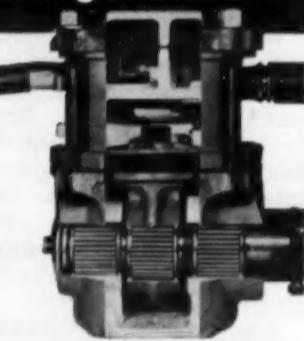


THIS IS a section of the compact equipment room in the Roosevelt Theatre, Jacksonville, Fla., where a 60-ton air conditioning system comprising eight 7 1/2-hp. UsAirco packaged units has been installed. The single blower at right delivers air from the lower halves of the units which operate in four pairs of 15 hp. each.

ACE, the quality line for air conditioning and refrigeration

MODEL 77 Diaphragm Descaling Acid Pump

Descaling compounds can't affect this pump! All parts in contact with compounds are completely acid-resistant. Can be supplied as portable unit with pump and motor mounted on sturdy base and with convenient carrying handles.



Plus a complete line of centrifugal pumps

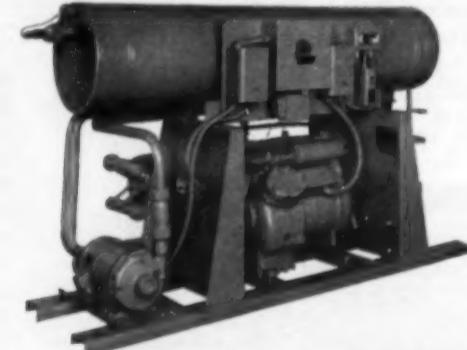
sized to fit your needs. 1/4 H.P. thru 7 1/2 H.P. Easy to install and compactly built. Advanced features include exclusive baked-on lifetime finish to enhance appearance and resist corrosion, John Crane mechanical seal, and all-bronze one-piece impellers. Continuous duty motor.

Manufacturers' representatives and distributors' inquiries invited.



PUMP CORPORATION

140 HERNANDO ST. • MEMPHIS, TENN.



Acme's NEW FLOW-COLD

... most advanced packaged chiller in the 3 thru 20-ton range.

Significant improvements in the use of balanced, proven Acme components make the Flow-Cold today's leading packaged chiller in its capacity range. Advanced design in the accessible hermetic type compressor permits operation "as quiet as a kitten's purr."

'Phone or write Acme for details

Acme
INDUSTRIES, INC.
JACKSON, MICHIGAN
manufacturers of
QUALITY
air conditioning
and refrigeration
equipment since 1919



HANSEN

QUICK-CONNECTIVE 2-WAY SHUT-OFF COUPLINGS!



To connect a Hansen Two-Way Shut-Off Coupling, you just pull back the sleeve and push the Plug into the Socket. To disconnect, merely pull back sleeve. No tools required. Similar valves in Socket and Plug shut off both ends of line when Coupling is disconnected—practically eliminate spilling of liquid or escape of gas at instant of disconnection.

FEMALE PIPE THREAD CONNECTIONS FROM 1/8" TO 1"

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from 1/8" to 1" inclusive. Available in brass or steel.

Also Straight-Through and One-Way Shut-Off Couplings. Write for Catalog.

REPRESENTATIVES IN PRINCIPAL CITIES

SINCE 1915



QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN

MANUFACTURING COMPANY

4031 WEST 150TH STREET • CLEVELAND 11, OHIO

For more information about products advertised on this page use Information Center, page 30.

Built-In Heat Exchanger By-Pass In Cooling Feature of New Janitrol Unit



THE "Win-Sum-Matic," Janitrol's new year-round combination gas-fired heating and air-cooled summer air conditioner for residential and light commercial applications, has a "Season Selector" which is said to permit immediate, automatic seasonal changeover and allows the unit to be switched back and forth from heating to cooling. Used in conjunction with Janitrol's new "Pride o' Yard" compressor-condenser unit, it is available in 2, 3, and 5-hp. capacities to operate with outside temperatures up to 125° F., the firm says.

COLUMBUS, Ohio—A new, combination gas-fired heating and air-cooled summer conditioner for residential and light commercial application is now being introduced to dealers by the Janitrol Heating and Air Conditioning Div. of Surface Combustion Corp. here.

In describing the new Win-Sum-Matic, H. C. Gurney, sales manager for Janitrol, pointed out engineering and design features, which he said will assure new, high standards of performance, ease of installation, and freedom from service headaches.

Design Permits Slower, Quieter Blower Work

The exclusive basic design of the Win-Sum-Matic features a built-in by-pass of the heat exchanger during cooling to provide a straight, unrestricted air flow from the blower to the cooling coil. This design permits slower, quieter blower operation and also a smaller motor size with less power consumption.

The internal air flow pattern is engineered to provide the correct air quantities for cooling and for heating automatically, without any seasonal blower adjustments.

'Season Selector' Allows Seasonal Changeover

A feature known as the "Season Selector" permits immediate seasonal changeover and allows the unit to be switched back and forth from heating to cooling, as desired, during changeable weather. When the "Season Selector" is set for cooling, the air by-passes the heat exchanger. With heat exchanger out of the air stream, extra air volume is assured.

With the control set for "heating," by-pass is closed and air passes through the heat exchanger and into the ducts at the proper volume for efficient heating. Thus blower adjustment for seasonal changeover is not required and high standards of comfort are maintained.

The outdoor compressor-condenser unit of the Win-Sum-

when the unit is installed, and the coil and remote compressor-condenser unit added later. Cooling capacities of 2, 3, and 5 hp. are available.

The Win-Sum-Matic is fully assembled and internally wired and tested before shipment from the factory, complete with controls.

Viking Air Products Names Wattles In Sales

CLEVELAND—Nathaniel Wattles of Kalamazoo, Mich., has been named district sales representative for Viking Air Products, Dick Gang, general sales manager for Viking, announces.

The cooling coil for the Win-Sum-Matic fits into its own, special compartment which is an integral part of the cabinet. If desired, the cooling coil compartment can be left empty

Wattles will represent Viking, manufacturer of furnace blowers, blower wheels, humidifiers, and residential fans, in its Michigan-Indiana-western Ohio territories.

Weathertron Names Vanlandingham to Distribution Post

BLOOMFIELD, N. J.—Francis R. Vanlandingham has been appointed manager-distribution development of General Electric Co.'s Weathertron Dept., according to Harry L. Williamson, department marketing manager.

Vanlandingham joined General Electric in 1954 as a field sales representative for Home Heating & Cooling Dept. products. Prior to that time he was a sales representative with Mechanical Contractors Supply, Inc., Weathertron distributor in

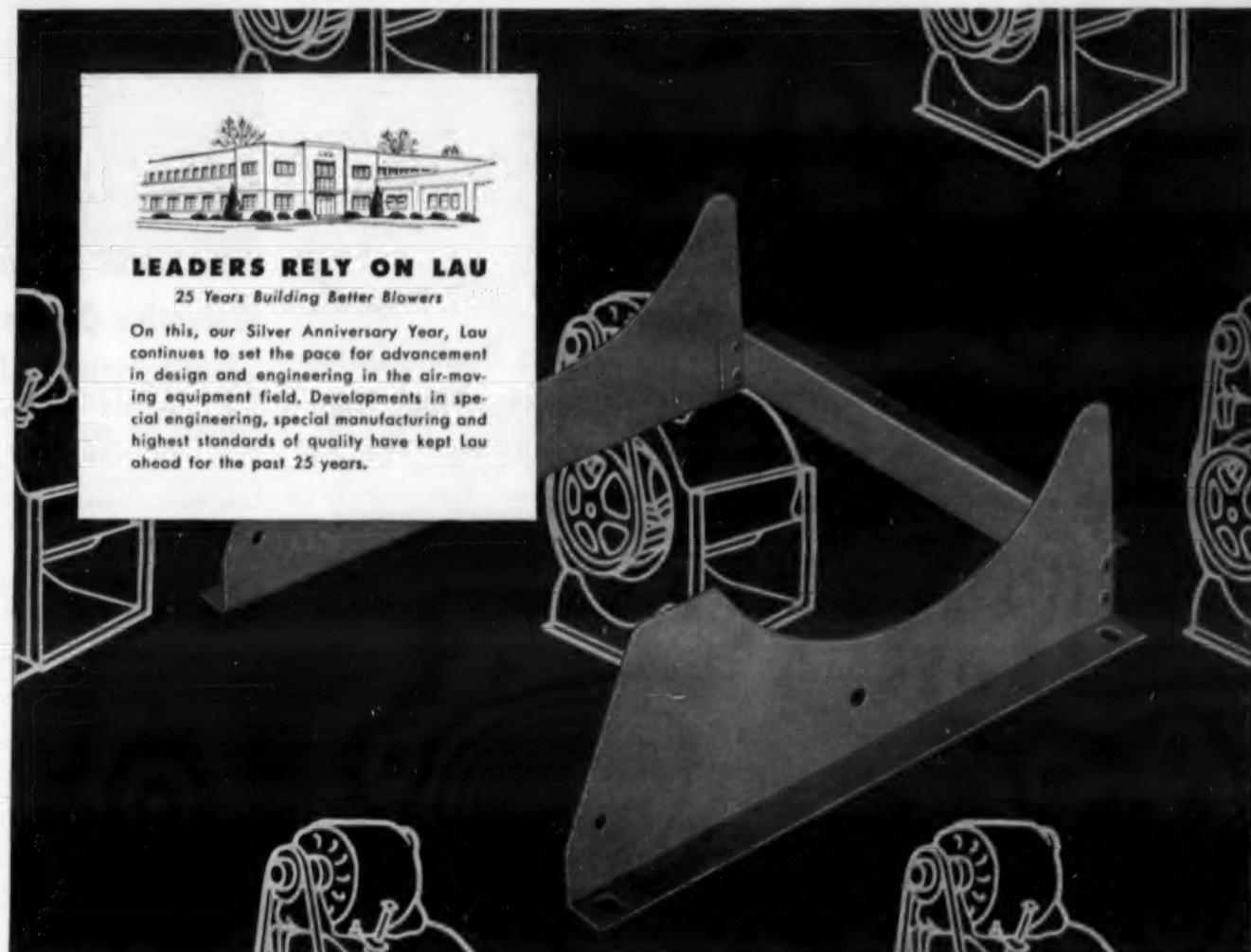
Winter Park, Fla. He has been in the sales and management field for the past 10 years.

As manager-distribution development, Vanlandingham will be responsible for the study and development of distribution policies, plans, and programs, and the development of distribution at the wholesale and retail level.

Stewart-Warner Names Wolf Regional Sales Mgr.

LEBANON, Ind.—The appointment of Gus Wolf as regional sales manager of Winkler air conditioning and heating equipment was announced recently by Herman E. Winkler, general sales manager of the U. S. Machine Div., Stewart-Warner Corp.

Wolf joined Stewart-Warner in 1948 as a field service engineer of the South Wind Div.



MASS HOUSING SUPPORT



THE LAU BLOWER COMPANY

2000 Home Ave. • DAYTON 7, OHIO

Other plants at Kitchener, Ont., Canada, and Azusa, California

LB-4, 56

This exclusive Lau-designed housing support has set the pattern for the blower industry. It has extreme structural rigidity, of heavy 8 to 12 gauge steel (depending on blower size), is cross-braced where required, and supports the entire blower assembly with strength in every part. You'll find our housing support applicable to all angles of discharge (standard and special), without adjustments or changes. There is no impedance to air flow. Provision has been made for rubber mounting grommets where needed. Get next to Lau for blowers and blower parts to meet your specific requirements. Write today for name of salesman in your area.



WORLD'S LARGEST MANUFACTURERS OF AIR-CONDITIONING BLOWERS

Kelvinator Cabinets In Color Cost No More



KEY NO. F-5321

DETROIT—An extensive steel kitchen cabinet line is being offered by Kelvinator in 12 colors plus white at no additional charge, and featuring a new styling without protruding hinges and handles.

Color selection in cabinets has been expanded to include four new colors—sea mist green, blossom pink, birch tan, and Cambridge blue.

Selection of cabinet sinks has been increased from four in the

1955 line to nine. All of the new sink and base cabinets have recessed toe space.

"Base cabinet drawers and doors have recessed chrome handles," Kelvinator said. "All drawers and doors close silently. Sturdy spring hinges hold doors fully-open or closed to prevent accidental bumping into partly opened doors."

"Drawers have neoprene-tired nylon rollers. Built-in stops hold drawers in a firm closed position and rubber bumpers cushion drawers to a fully-open position. Drawers are made of deep, one-piece drawn steel with well-rounded corners."

Sink cabinets are available in 72, 66, 60, 54, and 42-in. lengths. There are single and double compartment sinks with drainboards. Sink tops are either of enamel steel or fabricated plastic in choice of colors.

Built-in surface units also can be installed in any of the sink fronts and a choice made of plastic counter tops. Front panel of the S42 base cabinet is cut out for gas or electric control panels.

Built-in oven cabinets are designed for both gas and electric units.

Flexlite PLASTIC TUBING



Replaces Bloc Tin and

Stainless Steel. Ideal for

fountains, water etc.

All fittings interchangeable. Only knife and wrench needed to install. Contact your Refrigeration Supply Jobber or order direct.

WRITE FOR LITERATURE
AND PRICES

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Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised

(list name, page, and issue date)

WHAT'S NEW OR CURRENT LITERATURE AVAILABLE

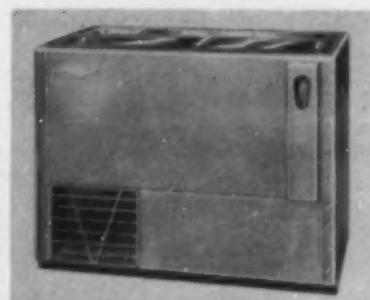
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AIR CONDITIONING & REFRIGERATION NEWS
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450 W. FORT ST. DETROIT 26, MICHIGAN



LaCrosse Milk Coolers

Claim Innovations

KEY NO. F-5322

LA CROSSE, Wis.—La Crosse Cooler Co. here announces it has incorporated several innovations in its "Supreme" milk cooler line.

One is that both the "Junior" and "Senior" models are now fabricated at a 34-in. height. Other features include zinc-grip, paint-grip metal in constructing the units, polished stainless steel slide type covers, heavy-duty partitions, gray hammertone baked enamel finish, front grille arrangement, and revised condensing compartment, the company says.

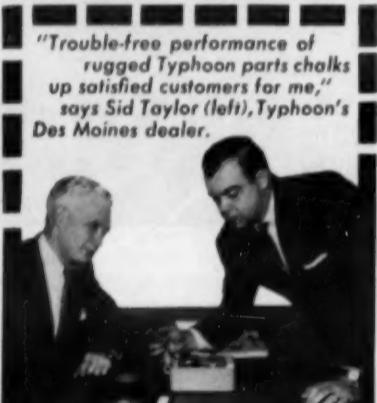


Peerless Double-Duty Case Has Flush Door

KEY NO. F-5323

MOUNT VERNON, N. Y.—A "Streamliner" flush door double-duty meat case providing storage as well as display space was recently announced by Peerless Equipment Sales Co.

Angled front allows customer toe space on the "Flush Door Series." Model S6, with flush doors for extra aisle space, is 42 in. high by 34 in. wide, available in 4, 6, 8, or 10-ft. lengths.



Most Profitable

FACTORY-DEALER TEAM
SET-UP IN THE BUSINESSTYphoon
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- Residential Year-Round Units
- Packaged Heat Pumps, Residential and Commercial

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Tell me about a Typhoon Franchise in my territory. Send me bulletin A-17.

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M-H Offers Electronic Control of Cooling

KEY NO. F-5324

MINNEAPOLIS—A new electronic "Air Conditioning Selector Panel" has been developed for offices, small department stores, drugstores, and supermarkets by Minneapolis-Honeywell Regulator Co. here.

Designed for installation in the manager's office, it lets him control customer comfort from his desk. Flush-mounted on the wall, the robin's-egg blue plexiglas panel contains dials for fingertip electronic control of store temperature, permits raising or lowering the amount of outdoor air for ventilation, and provides manual or automatic fan operation or shut-off, according to the manufacturer.

While providing for remote adjustment of temperature, outdoor air, and fan operation to meet changing conditions, the panel does not affect such automatic



features of electronic air conditioning control as outdoor temperature compensation and automatic switching from heating to cooling, company engineers said.

A locked box to prevent tampering of the control panel also may be provided.

'Eastonair' Available In
1, 5, and 10 lb. Units

KEY NO. F-5325

BROOKLYN—Easton R. S. Corp. announces that the recently introduced odor neutralizer and air freshener, "Eastonair," is now available in new 5 and 10-lb. units, in addition to the regular 1-lb. package.

Eastonair is a new solid form of chemical odor neutralizer used for removing odors from heating and cooling systems. Easton reports that the product does not contain harmful or smell desensitizing chemicals.

The new #500 package (5 lbs.) will effectively treat the 7 1/2 to 10-ton ranges, while the 10-lb. #1000 package will be used for the 15 to 25 tonnage range, the company said.

The smaller 1-lb. (#100) package will be continued. It handles fractional to 2-ton air conditioners. The #100 package will also serve with the two larger Eastonair units to treat intermediate tonnages.

The product carries a money-back guarantee. Eastonair is sold through local wholesale and jobber firms. When it is not available from these sources, the manufacturer ships direct, the company said.

All shipments are prepaid, in case lots, or over, the statement concluded.

REFRIGERATOR-FREEZER COMBINATIONS

MEET THE BUYER DEMAND
A BIG FREEZER VALUE
UNITED'S DUAL PURPOSE UPRIGHT

DRY BEVERAGE COOLERS

MILK DISPENSERS

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STORES
OVER
1,000 lbs.

This big freezer value provides ideal backroom storage wherever food is served or frozen food is sold. Meeting the most rigid commercial demands it means an extra measure of safety for food . . . extra savings in economy of operation.

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WRITE, WIRE OR PHONE TODAY

UPRIGHT FREEZERS BEER DISPENSERS

Thomas Produces 2-Piece Recold Cooling Towers Have Modulating Dampers Nylon Plastic Fittings

KEY NO. F-5327
LOS ANGELES—Production of a two-piece nylon plastic fittings line for use with metal or plastic tubing was recently announced by Thomas Associates here.

The fittings are molded of du Pont zytel polyamide resin which is said to give lighter weight and greater resistance to most acids and alkalis. Galvanic action is eliminated, permitting joining of brass, aluminum, copper, and steel, the company further stated.

Offered in full line of shapes and sizes from $\frac{1}{8}$ to $\frac{1}{2}$ in. tube and pipe sizes, interchangeable with comparable JIC, the fittings can be steam cleaned in their temperature range from -70° to 295° F.

A feature of the fittings, according to the manufacturer, is that the nut has a molded integral ferrule. This compresses against the tube or pipe to form a flareless vibration and lead-proof seal up to 500 p.s.i.

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WATER - COOLERS ICE MAKERS

... rust, dirt chlorine taste
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Insures service satisfaction for all coolers, ice-makers! Clear, taste-free water... crystal ice... every day... in all locations.

FILTRINE MFG COMPANY
216 W. PROSPECT ST. • WALDWICK, N. J.

KEY NO. F-5328

LOS ANGELES—Recold "Dri-Fan" cooling towers are now available with automatic modulating dampers for water temperature control, according to the manufacturer, Refrigeration Engineering, Inc. here.

Dampers provide a method of adjusting unit capacity to match compressor capacity under any condition from minimum to maximum, the firm said.

Dampers may be controlled by a thermostat which operates a modulating damper motor. An end switch cuts off the motor fan when dampers are closed to regulate the amount of air through the tower and keep water temperature constant, the company declared. Dampers have opposed action balanced blades and are connected internally by suitable hardware ready for installation.

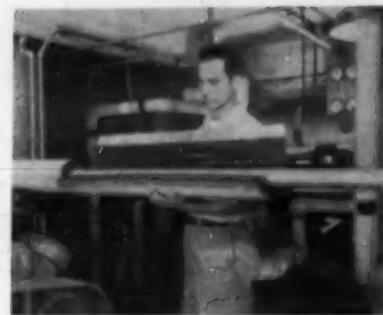
Access doors provide a water-



tight seal without use of gaskets or fasteners, according to the company, and a water bleed prevents clogging. Air is blown through the all-metal unit to eliminate air saturation from the fan section.



G-E TSA-40 switch.



Low Temperature Pipe Insulation Developed

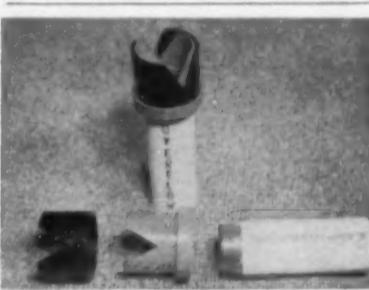
KEY NO. F-5332

LANCASTER, Pa.—Development of a low temperature pipe insulating material that eliminates installation steps of wiring, pointing, and painting was announced by Armstrong Cork Co.

Called "LT" cork covering, the new insulating material is made of "Corkboard" segments adhered to a backing of asbestos and aluminum laminated paper. Asbestos provides fire-resistant finish, the aluminum foil seals out moisture vapor.

The covering is applied by wrapping it around low temperature lines and sealing the lap with adhesive. Cork covering can be sawed to needed shapes and sizes. Insulating material can be removed and re-used on a new line if necessary, the company said.

LT cork covering is cut in 36-in. lengths and is claimed to fit all sizes of iron pipe or copper tubing from $\frac{1}{2}$ in. up. It is made in three standard thicknesses to meet varying temperature requirements.



General-Purpose Time Switch Offered by G-E

KEY NO. F-5330

SCHENECTADY, N. Y.—A general-purpose time switch suitable for indoor and outdoor use to turn electric circuits on or off at any time was announced by General Electric Corp.

TSA-40 can be used to control all types of electrical equipment, including air conditioning and refrigeration units, the company said. A shearing action of the contacts prevents welding and



Spencer Has Miniature Thermostat Control

KEY NO. F-5331

ATTLEBORO, Mass.—Spencer Thermostat Div. of Metals & Controls Corp. is introducing a new, miniature thermostat control said to be ideal for original equipment manufacturers who are concerned with volume usage suitable for an engineered thermostat application.

Announcing... A revolutionary development in water analysis



Typical applications include —

- Analyzing "Freon" and Sulfur Dioxide refrigerants.
- Continuous or batch analyses of water in a wide variety of gas streams — including process streams, inert atmospheres required in plant processes and laboratory dry boxes, and plant instrument streams.
- Measuring reaction rates where water is involved as a reactant, product or catalyst.
- Studies of water permeability of polymers.
- Studies of efficiency of drying systems.

DU PONT MODEL W

New Electrolytic Water Analyzer accurately measures water content down to better than 1 part per 1,000,000!

The new Model W Water Analyzer now enables you to make analyses of water content never before possible — in a wide variety of gas streams — and with an accuracy down to better than one part per million.

With the new Model W Water Analyzer, for example, you can analyze "Freon" and Sulfur Dioxide refrigerants with such accuracy within 2-3 minutes. Many other liquids with boiling temperatures up to 100° C and more can be similarly analyzed just as easily and quickly.

The new Model W Water Analyzer weighs less than 50 lbs., and is completely portable. Battery operation is optional.

For complete information, fill in the coupon and mail it today.

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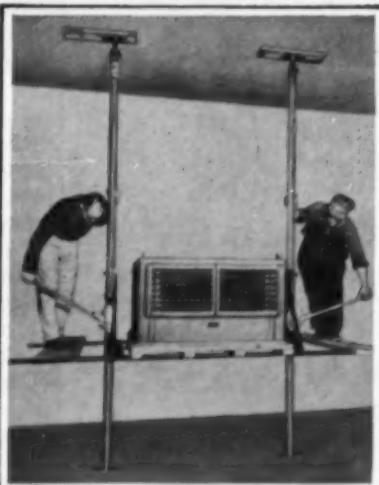
Please send me complete information on your new Model W Water Analyzer.

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MEECO
Instruments

Modern Protein Research Lab Has Many Cooling Needs

ALBANY, N. Y.—How modern refrigeration aids medical science is graphically illustrated at New York State's Div. of Laboratories & Research here.

Typical of several installations there are those in West Wing Building No. 6. This building was reconstructed to provide a modern protein research laboratory. Work conducted there consists of preparing different protein fractions of human blood plasma for experimental use.

To avoid denaturation of the protein, the work must be carried on at reduced temperatures. Of the five cold rooms, two are maintained at 23° F., one at 32° F., and one at 38° F. The



TYPICAL installation of Bush "UC" model unit cooler in work room of West Wing Bldg. No. 6, New York State's Div. of Laboratories and Research, Albany.

fifth room, used chiefly for storage, is held at 14° F.

Bush "US" model unit coolers are installed in the work rooms. Although the work necessitates frequent opening of the doors, temperatures are maintained within plus or minus 2° F. of the pre-setting almost without exception, it was stated.

A Bush "Therm-O-Cycle" unit is installed in the storage room and is electrically timed

to defrost every six hours.

Plans and specifications for the refrigeration installations were prepared under the supervision of the late F. L. Kysor of the Div. of Architecture, State of New York Department of Public Works.

Equipment was installed under contracts with Gardner's Refrigeration, Schenectady, and A. J. Eckert Refrigeration Corp., Albany.

New Refrigerants Can Produce Ultra-Low Temp Cooling for Liquid Gas Storage, Nuclear Studies

CHICAGO — Availability of stand higher temperatures in thermodynamic data on at least 25 potential refrigerants with boiling points extending over a 400° range offers a distinct challenge to engineers to develop new equipment for extending the benefits of mechanical cooling, according to R. C. McHarness of Du Pont Co.'s Kinetic Chemicals Div.

The field of refrigeration applications has barely been scratched, McHarness added.

Industry, he said, will rely heavily on engineering know-how in the next several years to apply cooling, particularly in the ultra-low temperature range, to the solution of many of its production problems.

Better, more versatile metals with added strength to with-

Processing Proved Important to Steel

Such processing already has proved important in production of certain types of steel, where the crystal structure of the metal can be controlled by refrigeration to obtain much better dimensional stability.

Among other fields of investigation for engineers, the Du Pont chemist suggested a wide and relatively new field existed in design of equipment for environmental testing of the behavior of both men and materials.

Temperature Range Expanding

"The temperature range has been expanding," McHarness explained, "until today people are considering the feasibility of environmental chambers that will cover the range from -250° to 600° F."

Design of cascade refrigeration systems, utilizing extremely low boiling refrigerants to achieve such temperatures, is a distinct challenge to engineers, he said.

Storage of natural gas in its liquid form by cooling it below its boiling point is an important goal and will require a new concept of design in low-temperature refrigeration equipment.

A practical system for achieving and holding the low temperatures required would result in considerable saving in storage and transportation equipment, he stated.

It might also provide an economical source of supplemental refrigeration in the cooling power of the liquefied natural gas when it is vaporized to its gaseous state for fuel use.

Low-Temp Refrigeration Aid to Nuclear Research

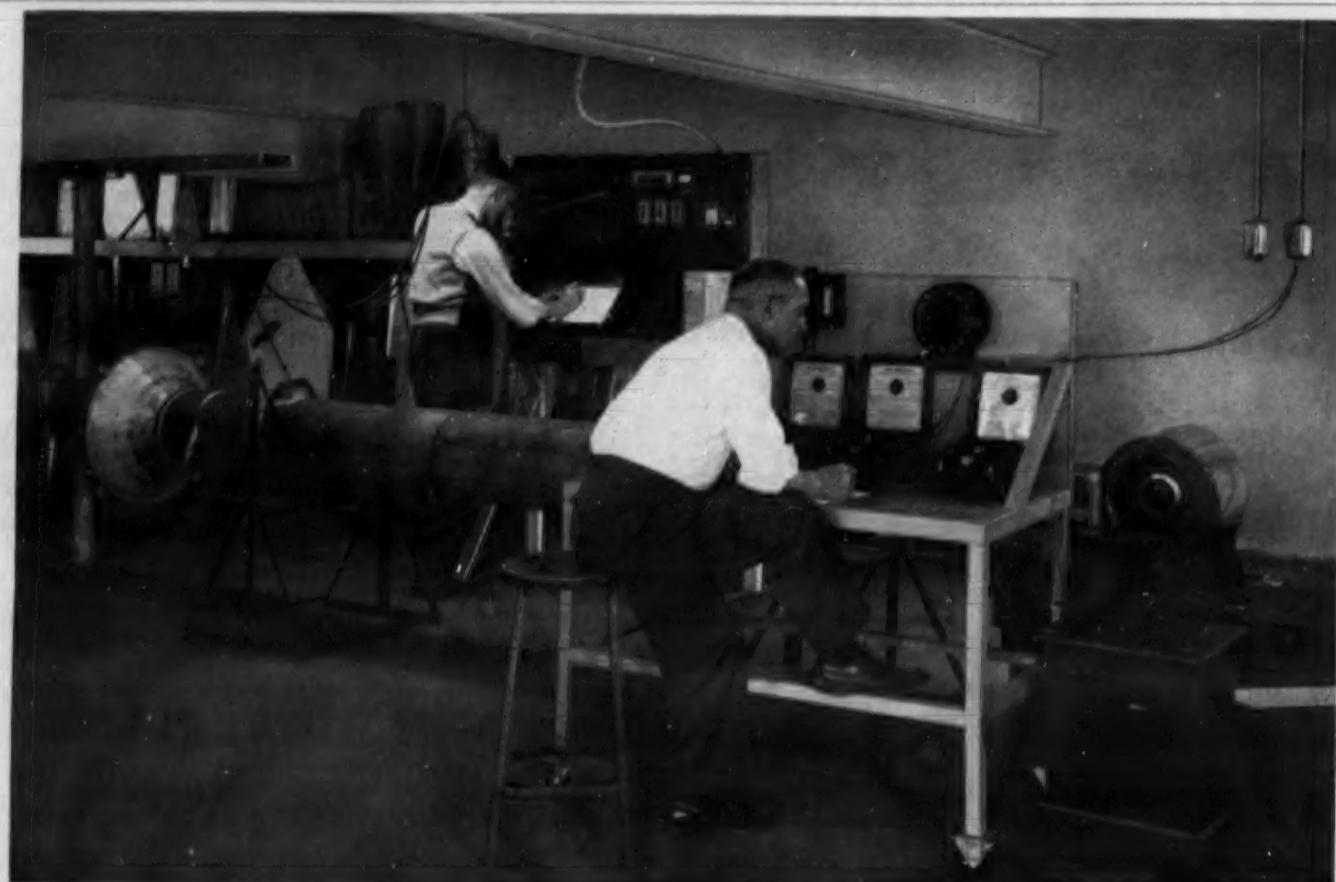
Low temperature refrigeration is also important in the field of nuclear research, he explained.

He said that in very high vacuum equipment such as the cyclotron, the use of a cold trap ahead of the diffusion pump helps remove condensables and slow down the air molecules so that they are more easily entrained by the working fluid of the diffusion pump.

Cascade systems employing "Freon-13" and "Freon-22" refrigerants have been used successfully, while a compound compression system using only "Freon-13B1" refrigerant has been operated successfully at temperatures as low as -130° F., according to the speaker.

"These are a few examples of what the refrigeration engineer has been able to accomplish with the refrigerants and thermo-physical data which are available to him today," McHarness said. "Other new uses will develop as we learn more about the tools we have to work with in this field."

A dozen "Freon" compounds are available with boiling points ranging from -198° to 118° F.



An expanded *Brundage* service for engineering departments and manufacturers

The terrific pace of the air conditioning and heating industry is creating formidable work loads for many engineering departments. In some cases, this causes bottle-necks . . . slowing down the marketing of profitable new products.

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Recent expansion has more than doubled Brundage design and testing facilities. This new capacity, combined with 35 years of experience in solving air moving problems, is at your service. If you want to put it to use on any question involving forced air, talk to your Brundage representative or contact Brundage, direct.



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FREE BOOKLET,
"Blowers—and what makes them work better," gives practical installation and maintenance procedures. Write for your copy.



For more information about products advertised on this page use Information Center, page 30.

700 Items No Longer Need License**Most Refrigeration, Air Conditioning Equipment Now Can Be Shipped to Soviet Union Orbit**

WASHINGTON, D. C.—Most refrigeration and air conditioning equipment and home appliances can now be shipped to the Soviet Union and her European satellites without obtaining an export license for each shipment.

The U. S. Department of Commerce included these items on a list of non-strategic goods published recently in the first major easing of trade restrictions with European Communist countries since the beginning of the "cold war."

The move does not affect the strict embargo against all shipments to Red China, North Korea, and other proscribed areas in the Far East, however, Commerce Secretary Sinclair Weeks warned.

Specifically mentioned in the list of 700 items for which export licenses are no longer required are: electrical household type refrigerators, electric free air circulating fans, electric household laundry equipment, electric household motor-driven appliances except freezers and specially fabricated parts, electric household cooking and heating appliances, electric commercial cooking and food service equipment and specially fabricated parts.

Air conditioning and refrigerating equipment and parts; ice making machines and specially fabricated parts and accessories; self-contained commercial-type refrigerators and freezers, except blood, bone, and tissue bank freezers and deep freeze storage cabinets; commercial type refrigerators and freezers (other than self contained), except refrigerating systems for trucks and railway

Recold Names Lewis As Southwest Manager

LOS ANGELES—J. C. Lewis has been named southwest district manager for Refrigeration Engineering, Inc., manufacturer of air conditioning and refrigeration equipment marketed under the "Recold" brand name.

Lewis will have headquarters in Houston and will cover the Texas-Oklahoma territory on all Recold products. Prior to this appointment, Lewis operated the J. C. Lewis Co. and was distributor for Recold products in the Houston trade area.

Announcement of his appointment was made by Hy Jarvis, president of Refrigeration Engineering, Inc.

Lewis has many years of experience in both air conditioning and refrigeration in the southwest. He was formerly a sales representative for Drayer-Hanson, Inc., and had previously been sales manager for W. S. Kilpatrick & Co. Prior to that he had spent five years with the York Corp. in Los Angeles as a sales engineer in commercial refrigeration and air conditioning equipment.



J. C. Lewis

Trend to Refrigerated Dairy Trucks Shows In Divco Sales Report

DETROIT—Trend to refrigerated dairy trucks is continuing to grow, according to Divco Corp., truck manufacturer.

In the last fiscal year, Divco reports sales of insulation and refrigeration equipment for milk trucks were \$1,168,654, almost three times the \$435,266 of the preceding year.

For this year, the firm expects that over 50% of trucks it makes for the dairy industry will be insulated.

Net sales for the fiscal year ended last Oct. 31 rose to \$12,214,394 from \$9,121,298 in the preceding year. Net profit climbed to \$434,463, or 97 cents a share, from \$385,144, or 86 cents, in fiscal 1954.

Weber Showcase Profit Hits \$934,680 for '55

LOS ANGELES—Weber Showcase & Fixture Co. reported net profit for 1955 of \$934,680, equal to \$2.10 a common share on sales of \$27,855,392.

This compares with a 1954 net income of \$697,823, or \$1.50 a share on sales of \$23,855,392.

Stockholders re-elected all directors who, in turn, re-elected all officers, it was noted.

Regular quarterly dividend of 10 cents a share was declared on the common stock, payable May 15 to stockholders of record.

Trane Names Jameson

LA CROSSE, Wis.—The Trane Co. has announced that Richard E. Jameson was appointed sales representative in charge of a new sales sub-office in Sioux Falls, S. D.

Davis Is Ad Manager At Bastian Blessing

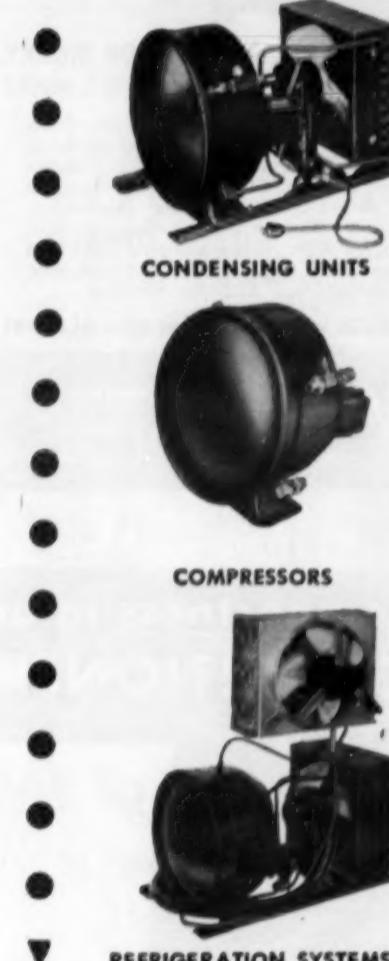
CHICAGO—Appointment of G. Douglas Davis as advertising manager of The Bastian-Blessing Co. has been announced by L. G. Blessing, president of the firm.

By assigning the advertising of its fountain-food equipment to Davis, who is now handling the advertising of its "RegO" line of liquefied petroleum gas equipment, the company consolidates its advertising under one head, the company's announcement said.

Myron Steczynski, who has been serving as advertising manager of the fountain-food line, has returned to the engineering department as staff consultant to assist in the development work incidental to the company's rapidly expanding operations, it was added.

DEPENDABILITY

**That's Why
Every Day More
and More and
More Products
are Being
Equipped with**

**AMERICAN MOTORS**

**HERMETIC CONDENSING UNITS, COMPRESSORS
AND REFRIGERATION SYSTEMS**

Millions of installations have proved the dependability of American Motors equipment. If you have an old or a new application problem, the vast facilities and resources of American Motors are at your

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American Motors Corp.

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DIVISION**

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For more information about products advertised on this page use Information Center, page 30.

Kentucky Contractor Recommends Attic Fan with Home Air Conditioning

LOUISVILLE, Ky.—One of this city's leading heating and air conditioning contractors has pioneered a practical, working theory for what he terms "more efficient, more comfortable" air conditioning.

H. B. Villesvik, president of the Hart Furnace and Supply Co., Inc., and his staff of three engineers are responsible for residential air conditioning applications which offer some new concepts.

As an example, Hart Co. has been installing attic fans in conjunction with air condition-

ing for more than five years. In many cases, the installation of the fan has been a major factor in reducing the actual cost of air conditioning and in all cases, the installation of the fan has been an important factor in creating even, comfortable temperatures, Hart Co. officials declare.

Harold L. Carr, vice president of the firm and a graduate heating and ventilating engineer, cites two examples of fan installations in conjunction with air conditioning which launched his firm into this advanced

profit from filter merchandising



More profit on per-unit sales plus an established demand and a natural tie-in with your present servicing activities makes A-Lum-O-Aire Filters your best bet for effective filter merchandising. Exclusive features that help you sell — assure customer satisfaction. Washes clean with water in a jiffy. Nothing to add; no mess to clean up after. Saves valuable time and eliminates the cost and bother of extra materials. Aluminum wool media does ALL the filtering.

Make A-LUM-O-AIRE your source for special sizes!

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METAL WOOL DIVISION
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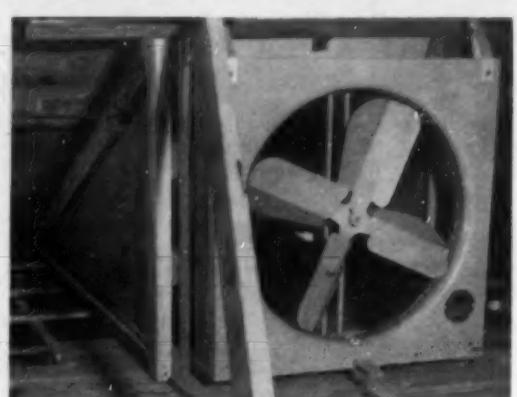
Check These Features

- **rustproof**
- **fireproof**
- **requires no messy oils or adhesives**
- **washes clean with water**
- **safe**
- **clean**
- **economical**
- **approved by UL (class 1)**

GET DETAILS TODAY!



SECRET of the full ventilation is the attic vents placed regularly around the soffit. These allow air to enter on all sides of the attic so that there is no stratification of air with the fan operating. Carr recommends such soffit vents even in gabled roofs, because they allow ventilation of the entire area.



24-in. Lou panel fan is placed in center of the attic, where it is easily accessible for regular oiling and service. An exhaust box is directed to automatic louvers in a dormer to the rear of the home.

thinking, and determined the policy it now follows of recommending a fan in every air conditioning residence.

"Over five years ago, we added air conditioning to the existing heating system in an older type two-story home. The owner had been using a Lau 'Rancher' fan in the second floor ceiling to ventilate the entire house, but wanted the advantages of controlled humidity and cooler temperatures offered by air conditioning.

Temperature Differential Between Floors Too Much

"We put in an adequate unit to cool the home. The house itself was well insulated, and the job appeared routine. However, when we got the unit into operation, we found that the temperature differential between the first and second floors was so wide as to be wholly unacceptable. On a hot day, we could bring the second floor down to about 82°, but the first floor chilled to an uncomfor-

able temperature in the low 70's.

"The second floor was comfortable in relation to the outside air, but the first floor was too cold. If you walked into the house from outdoors you had a chill. To a lesser degree discomfort was noticeable in going upstairs or downstairs.

"We knew that the attic temperature was probably building up to 140°, which is not unusual in this part of the country. We also knew that despite the insulation between the attic and residential quarters, there was bound to be a terrific sensible heat flow.

Attic Fan Solved Problem

"We took the homeowner's old Rancher fan—which had been installed horizontally—and set it up vertically against a vent in the gable end of the attic. At first we left it set up on its original automatic timer switch, and found that in drawing air through the attic, it reduced the temperature 30°—enough to wipe out almost com-

pletely the temperature differential between the first and second floors.

"The automatic timer wasn't satisfactory, because it had to be set daily, and sometimes the owner forgot to do it. So we wired the fan up in conjunction with the compressor on the air conditioning unit. That was unsatisfactory too, as the attic temperature was bound to build up too high before the compressor went to work.

"Finally, we put the fan on an independent, reverse acting thermostat, so that it would turn on at 92° F. and stay on until the attic was cooled to that temperature. It worked.

"When we had finally worked out what we were after, we had an efficient air conditioning installation with a temperature differential of less than 2° between the first and the second floors."

Fans Considered as Standard Recommendation

It was at that point, Carr points out, that his firm started thinking in terms of attic fans as a permanent recommendation with each air conditioning unit.

"The second case involved a brand new ranch-type home in a treeless subdivision. The house had been roughed in for air conditioning, but not installed. The owner moved in in September; phoned us the following May for an air conditioning unit.

"Based on our previous experience, we suggested that he install an attic fan too, but he declined. We installed the air conditioning unit and hoped for

(Concluded on next page)

New compactness in air-cooled AIR CONDITIONER design!



Smallest air-cooled, self-contained (not remote) 5-ton central type unit made.

5 natural wood-grain finishes available on all free-standing models.

Completely automatic, thermostat controlled, air-cooled condenser.

MODEL RO-525A
(with air distribution head)

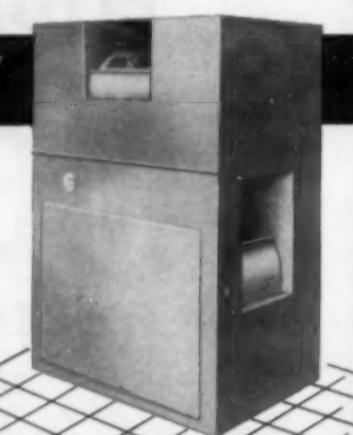
Complete air conditioning for entire home—or equivalent commercial or office area—at the lowest cost in smallest space!
GENERAL AIR CONDITIONERS deliver 2, 3 or 5 tons of cooling. All models operate on standard outlet (220 V, single and 3 phase except 2-ton—single phase only).

Attic, roof, outside, or free-standing units

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FIVE YEAR GUARANTEE—easy payment plan

FOR DEHYDRATING AND TESTING...

BEACH-RUSS Portable VACUUM PUMPS



Model O Single-Stage Pump—1 mm. vacuum, blank flange, 1 CFM, 1/4 HP, weight 48 lbs.

Model A Two-Stage Pump—1/10 mm. vacuum, blank flange, 2.5 CFM, 1/2 HP, weight 80 lbs.

Write for prices and data.

BEACH-RUSS COMPANY

52 CHURCH ST. • NEW YORK 7, N.Y.

Thermostat has 3 positions: Continuous—Automatic, Fan & Compressor—OFF.



Harold L. Carr, vice president of the Hart Furnace & Supply Co., points out the dormer at the rear of the home, through which hot, stale attic air is exhausted. Dormer was located at rear of home so that long, low appearance of front elevation would remain uncluttered.



HEATING and air conditioning unit installed in the home is a Mueller Climatrol. This 3-ton unit is doing a job which would usually require a 5-ton unit. The attic fan, combined with double-insulating windows was responsible for this reduction in initial investment by the homeowner.

Attic Fan Recommended--

(Concluded from preceding page) the best. Shortly thereafter, the owner complained of a stratification of air within his home. We checked; discovered a 4° F. temperature differential between knee-level and head-level. We suggested that an attic fan would alleviate the condition.

"The owner told us to go ahead. Since the house was a three-bedroom one-floor plan with a hip-roof, we had to construct a dormer in order to have exhaust area for the fan. We installed a 24-in. Lau panel fan in the dormer and cut additional grilles in the soffit for free circulation of intake air.

"This time we immediately hooked up a reverse acting thermostat in the attic. The problem of air stratification in the residential quarters was completely eliminated."

Carr notes that from that point on, it was standard procedure to recommend an attic fan with any air conditioning installation. In calculating the air conditioning requirements of a home in subsequent jobs, he has worked with an ambient attic temperature figure of 110° rather than the usual 140° without the benefit of forced air circulation.

3-Ton System Did Job Usually Requiring 5 Tons

In a large, two-bedroom dwelling in a swanky Louisville residential area, there is a large kitchen, pantry, family-room, living room, three baths, den, and dining area. The home might have ordinarily required a 5-ton air conditioning unit because of the extensive use of floor-to-ceiling glass in living and family rooms.

Hart Co. has successfully installed a 3-ton unit. Although double-pane insulating glass was used in the large windows, the attic fan was a major contributing factor.

This home, too, was of hip-roofed construction, a popular type in the Louisville area. Carr worked in the original planning of the home, so that when it was built, a dormer was added at the rear of the home. Unnoticeable from the street, it takes nothing from the ground-hugging lines of the hip-roof.

Again, adequate soffit vents were constructed and the Lau 24-in. panel fan installed on a reverse-acting thermostat. The fan is almost at the center of the attic area, with an exhaust

fan in an area where it can easily receive routine oiling and service, while successfully venting to the outside.

"We have been setting our

fans to begin when the temperature reaches 92° in the attic," Carr said. "This year, we plan to set them at 85° and thereby reduce even more of the load on the air conditioning unit."

Carr points out another advantage of an attic fan—whether used in conjunction with air conditioning or not. Many people store clothing and other items in an attic. If that attic is not sufficiently ventilated, hot damp summer air is trapped, resulting in the formation of mildew. An attic fan will alleviate this condition.

is being erected, to be in on the original planning. That way, we can recommend whatever a particular house needs in the way of highly reflecting roofs, tinted glass, shaded windows, an attic fan, and many other factors.

"But permeating our thinking in every case are the advantages gained from using an attic fan. Some owners still balk at the slightly added cost of this installation, but when the chips are down and the weather is hot and humid, they have temperature differential problems, and we put in the fan."

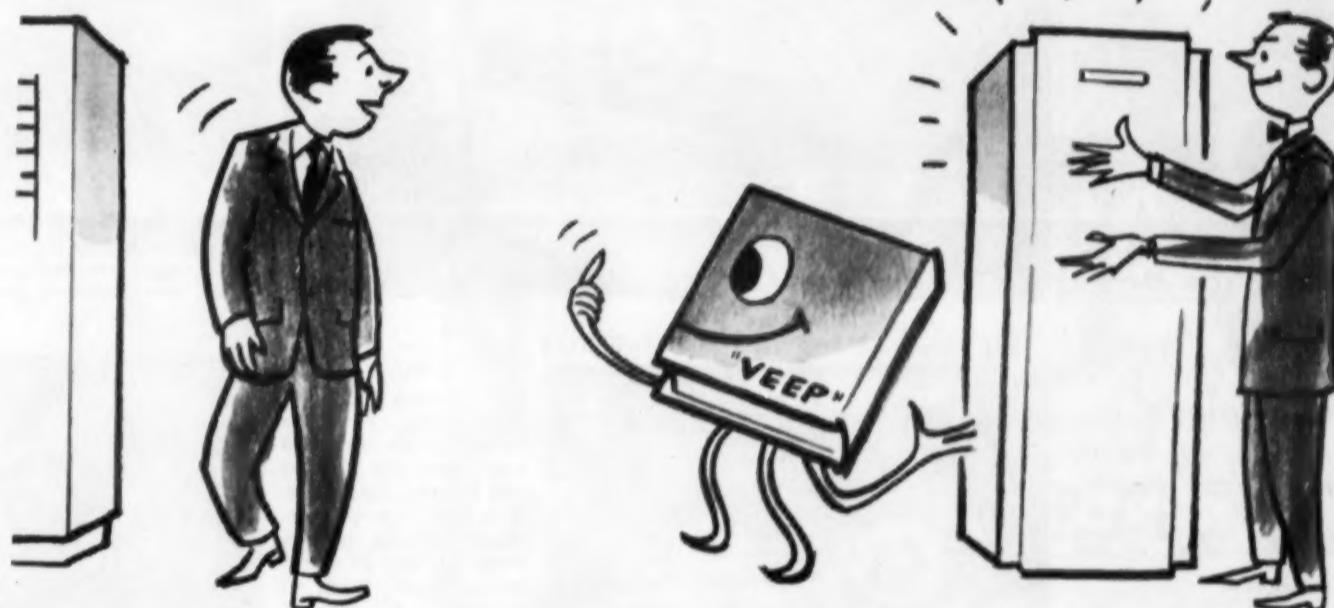
Dealer Gets Big Order For 240 Weathertrons

BLOOMFIELD, N. J.—When Radio and Appliance Corp. of Nashville, Tenn. placed an order for 240 "Weathertrons" for immediate delivery, it was the largest single order in Weathertron Dept. history, the General Electric Co. department announced.

Report #4

THE G-E "VEEP" IN ACTION

How new G-E "Magic Sales-Maker"—a consumer visual sales presentation, popularly called "The Veep"—helps increase sales for G-E Home Heating and Cooling Dealers



How the "VEEP" helped switch sales to me after a competitive furnace had already been bought



JACK GRODZINS,
Allstate Heating and
Sheet Metal Co., Inc.,
General Electric Dealer
Chicago, Ill.

Here's what the "Veep" did for Jack Grodzins of Allstate Heating & Sheet Metal Co., Inc., near Chicago.

While driving through a suburb Jack noticed a new home under construction. He went in to see if the heating system had been contracted. He noticed that four register openings had been roughed in—it looked as if he was too late. But on his way out

a man stopped him. He was the owner of the property. "I explained why I had stopped," Jack writes. "I asked him if he would be interested in air conditioning. He was. I suggested that, before I gave him a price on cooling, he should see his own contractor." Turned out that the owner wasn't too pleased with his

contractor's work. Jack then went through the "Veep," not only on air conditioning but also on the G-E furnace and Air-Wall* System. The owner was so impressed that he got a release from his original contractor and signed with Jack for a G-E cooling unit and a G-E heating unit with Air-Wall registers.

Watch for more true sales stories like this one—in future G-E advertisements in this publication. They all teach the same lesson:—the profit-wise home heating and cooling dealer is the one who has climbed on the G-E Bandwagon. Want to join up?



FREE! Sales Secrets That You Can Use. Exciting success stories by G-E salesmen tell how they broke sales records with the aid of the "Veep." For your copy write GENERAL ELECTRIC, HOME HEATING AND COOLING DEPT. AC-56 BLOOMFIELD, N. J.

Progress Is Our Most Important Product

GENERAL  **ELECTRIC**

Home Heating and Cooling Dept., Bloomfield, N. J.

For more information about products advertised on this page use Information Center, page 30.

What Was New

Super Market Institute



Pictures of products and merchandising displays appearing on this and the following page are from the Super Market Institute held in Chicago, May 6-9. For further information on these products, please use key numbers with the Information Center blank on page 30 of this issue.

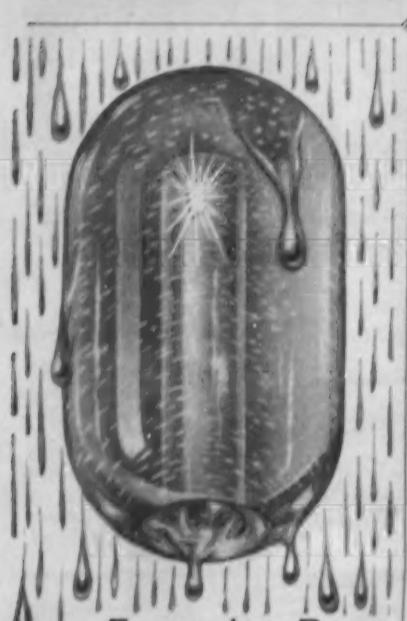
KEY NO. F-530

LEFT: Eye-catching are the three refrigerated shelves in Federal Refrigerator Co.'s 6400 series dairy cases that come in 7 and 11-ft. lengths. A. T. Mickle (l.), Federal sales manager, and Homer Redmond of the H. A. Redmond Co., Cleveland, study the new feature.



KEY NO. F-531

EXAMINING MEAT PACKAGE from Tyler Refrigeration Corp.'s new 33-in. high meat case is S. J. Henry of Thorofare Markets, Pittsburgh. At his elbow are "Sparky" Miller of Tyler's national accounts staff. Behind case are Tyler's Rex Holmes of national accounts (l.) and Bill Gallagher, central division manager.



Every Ice Boy
Ice Tip
WASHED
while made...
an important sanitary feature
your customers appreciate

You can boost your profits by selling all these customer-satisfying Ice Boy features:

- Dial-a-size Control
- King Size Ice Tips
- Sanitary — stainless steel interior — ice tips washed while made.
- Low Maintenance Cost — only pennies per day

Make every call count — increase your selling potential — Ice Boys can be used in every type of outlet — bars, restaurants, cafeterias, hotels, hospitals, florists, groceries, motels, etc.



GETTING MORE
POPULAR
EVERY DAY.
WATCH
FOR THE
SIGN OF
GOOD ICE.
ICE BOY
WORKS HERE

ICE BOY

Model LC-25
by Lipman Division of Yates-American

Tear out and mail today.

Ice Boy
Yates-American Machine Co.
Dept. F, 763 Fourth Street, Beloit, Wisconsin
Gentlemen: I'd like to sell the Ice Boy line. Please rush me complete information.

Name _____
Title _____
Company _____
Address _____
City _____ Zone _____ State _____

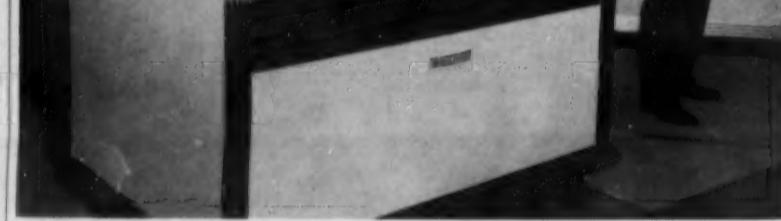
L-503

AIRO stands for

Fast, dependable,
world-wide service.
Refrigeration and
Air Conditioning parts
and supplies.
Write for current Catalog

AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

For more information about products advertised on this page use Information Center, page 30.



KEY NO. F-532

DISPLAY SHELVES in Weber Showcase & Fixture Co.'s "Top View" island display case can be lowered 12 in. for deep display of fast moving items. Al Quist (l.), Weber regional manager, explains to Cliff Brown of Menominee, Mich. (c.), and Rhodes Hanna, Weber's Cleveland district manager. Hand rails are heated for customer comfort.



KEY NO. F-534

LEFT: Supermarkets can make their own brand ice cream with an Emery Thompson ice cream freezer. John Treble (r.), manager of the company's Detroit office, tells Fred & Mrs. Meijer of Meijer's Supermarkets, Grand Rapids, Mich.



KEY NO. F-533

ABOVE: Parked at the end of a gondola is the place for this self-contained island frozen food case that will hold 700 packages. Jack S. Twist, sales manager for Sherer-Gillett Co. (c.) tells Irving Sedwin of Dave's Market, Union, N. J. (l.) while R. O. Scheible, Sherer's assistant sales manager looks on.

EDWARDS

CO-AXIAL CONDENSERS

The NEWEST design in water-cooled refrigerant condensers. Used by major equipment manufacturers because of these SELLING ADVANTAGES:

- Use 35% less water
- Cost reduced 30 to 40%
- Stock sizes: $\frac{1}{2}$ to $7\frac{1}{2}$ tons
- No internal joints
- Easy installation
- Many compact shapes

Send for catalog TT-652 TODAY—or call TERHUNE 5-2808



A TYPICAL CONFIGURATION—
EFFICIENT, COMPACT, DESIGN

EDWARDS 100 ALEXANDER AVENUE
ENGINEERING CORP. POMPTON PLAINS, NEW JERSEY



KEY NO. F-5333

NEW SELF-CONTAINED island frozen food case by McCray Refrigerator Co. gives pause for reflection by Clair L. Miller, McCray district manager (l.) and Walter Goad, McCray distributor in Evansville, Ind.



KEY NO. F-5336

ABOVE: This is it, Mary Lou Martin says, indicating the General Electric Co.'s packaged horizontal 3-ton air conditioning unit that takes no floor space.



KEY NO. F-5334

REFRIGERATED SHELVING offering no barriers of self-service and equipped with a cascading system of refrigerating gets pleased grin from Fred Welling of Meijers Supermarkets in Grand Rapids, Mich. as J. G. Oliver, divisional sales manager for Hussmann Refrigerator Co. (l.) explains.



KEY NO. F-5335

TESTING THE PRODUCE from a "Superline" produce case exhibited by Friedrich Refrigerators, Inc. are Leo Bronstein, Friedrich divisional manager at Albany, N. Y. (l.), J. W. Rubenstone, regional manager in the Pacific Northwest, and Miss Z. Bobins of Chicago. To right is Friedrich's new four shelf dairy merchandiser.

Get On The EASTONAIR Bandwagon!

Earn Additional Profits With The Guaranteed AIR FRESHENER AND ODOR NEUTRALIZER

- Solves odor and air freshening problems even in areas affected by industrial pollution.
- Fits all cooling and tonnage units.
- Installs without attachments.
- Increases volume of cool air reused.
- Is efficient to use. A chemical solid packed in 1, 5 and 10 lb. units.

MONEY BACK GUARANTEE! ORDER NOW! STOCKED BY LEADING WHOLESALERS AND JOBBERS — OR WRITE DIRECTLY TO US.

EASTON R.S.CORP.
876 PACIFIC ST. • MAIN 2-3110
BROOKLYN 38, N.Y.

CHOICE TERRITORIES OPEN IN MANY AREAS AND STATES. WRITE FOR OUR SALES BOOSTING PROMOTION PLAN.



KEY NO. F-5338

REVOLVING DISPLAY shows how supermarkets can be air conditioned with "Kooler-Aire" central station units by United States Air Conditioning Corp. Robert McLain (l.) looks up information for Dale Peterson and Al Cloeys of Peterson Fixture Co., Moline, Ill.



KEY NO. F-5337

RIGHT: First public showing of C. V. Hill's new service delicatessen case for supermarkets was made at the SMI show. Getting to the heart of the matter are Alexander Feuerman (l.), of Diamond K Markets, Mt. Vernon, N. Y. and V. H. Steg, Hill retail sales manager.

"For compressor shutdown defrosting I buy **PARAGON 3400 SERIES** time switches because they give me ..."

more years of trouble-free service!"

Smart business? You bet! What's more important than cutting service call-backs or reducing food spoilage? Key to the 3400 series continuous, uninterrupted service is its industrial-type, 4-watt motor. This heavy-duty motor — exclusive with Paragon — has a minimum life expectancy of 5 to 7½ years — many last 12 years or longer!

Add to this the many patented construction and operation features found in all Paragon time switches. You'll see why the Paragon 3400 series is your **BEST BUY** for all types of commercial refrigeration defrosting and air conditioning applications. Available in 120-V, 60 cycle and 240-V, 60 cycle; 30 Amps. 1 HP types.

Order the new 3400 series
from your Refrigeration Equipment Wholesaler, or write Dept. 1687 for bulletin.

Also write for complete facts on these famous Paragon timers:

Commercial Defroster Timer
Dehumidifier Timer
7-Day Calendar Dial Timer
Switch
Fan Timers
Air Timer

PARAGON ELECTRIC COMPANY
TWO RIVERS, WISCONSIN
WORLD'S FOREMOST MANUFACTURER OF TIME CONTROLS



SPECIALLY EQUIPPED with controls to maintain a 50 to 60° F. temperature for meat cutting rooms is this white-colored packaged air conditioner exhibited by Typhoon Air Conditioning Co. Vernon Hancock of Bell Refrigeration, Cleveland (1), hears from Mel Klingher, Typhoon district manager, that Typhoon is just starting to promote this type of unit.



SPOT FREEZER merchandiser on concealed casters makes public debut in booth of C. Q. Sherman Associates, Inc. Deeply interested is W. Bruce Weese of Vancouver, B. C., Can. (1), who gets the story from Bud Wilkes, Sherman's vice president in charge of sales.



FROZEN-FOOD PACKS ACROSS give more profits per lineal foot!

This Warren Master Merchandiser gives your customer maximum return from every foot of floor space. The extra variety . . . extra capacity . . . the "Lucky 7th" row affords make Warren Master Merchandisers the best buy of all. Get the details now!

WARREN IL-11 ISLAND MASTER MERCHANDISER

This frozen-food super salesman holds 1449 packages; features Multi-Case construction for single and back-to-back line-ups. Three-position shelves for heavy and light loads.

WRITE TODAY FOR
FREE LITERATURE



Warren Refrigerators

P. O. BOX 1436

ATLANTA 1, GEORGIA

More Pictures from The Supermarket Show



THROUGH PANTOMIME and a throat microphone so that only visitors using earphones can hear, vivacious model tells the story of Westinghouse Electric Corp.'s "SU" packaged air conditioning units for supermarkets.

Brunner Appoints Hickey N.Y. Area Representative

UTICA, N. Y.—The appointment of George L. Hickey Jr. as a Brunner sales representative in the New York metropolitan area was announced recently by Frank C. Hawk, vice president in charge of sales of the Brunner Mfg. Co. and The Brunner Co.

As sales representative for the affiliated companies, Hickey will be under the direction of J. W. Thomas, New York City district manager, with headquarters at 55 West 42nd St.

Hickey's duties will include close cooperation with contractors in the area in the application of Brunner two-stage units for low temperature installations and also on air conditioning applications requiring units within the 100-hp. range served by Brunner.

Prior to joining Brunner, Hickey was sales engineer in the New York area and New England for Doyle & Roth Mfg. Co., Brooklyn manufacturer of industrial heat exchanger equipment.

Before that he had served as sales engineer in New York, New England, Pittsburgh, and Buffalo and as assistant export manager in New York for Servel and as New York district manager for Copeland Refrigeration Corp.

Sweden Names Goodman Customer Service Supervisor

SEATTLE—Appointment of James H. Goodman as customer service supervisor for Sweden Freezer Mfg. Co. here was announced recently by Harvey F. Swenson, president.

Goodman will handle customer service problems, supervise the preparation of equipment handbooks and manuals, and assist in the technical training of factory representatives.

The new service supervisor is a graduate of Edison Technical school in Seattle where he majored in refrigeration engineering. He has been in refrigeration sales and service work since.

1-Ton Package Units To Air Condition 2 Experimental Busses

DALLAS—Two Dallas Transit Co. busses recently were being equipped with air conditioning units by Frigikar Corp. here in an experimental program which will run through this summer.

Cooling will be provided by five 1-ton units spaced along the roof of each bus. Constant cooling of the interior will be possible whether the vehicles are moving or standing still, since each package air conditioning unit is independently powered and doesn't require a power takeoff from the bus engine, according to Bert Mitchell, president of Frigikar.

W. R. Burns, president of the transit firm, emphasized that the project is definitely experimental.

"The only practical air conditioning system for transit vehicles must be one that can be operated efficiently within the present structure of costs," he said. "One summer's operation should prove to us whether the systems can be used without prohibitive increases in costs and consequently, fare increases."

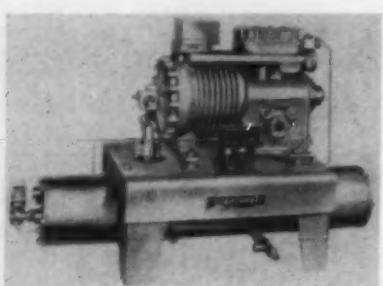
American Gas Machine Names Reed, Burbank

ALBERT LEA, Minn.—A new national service manager and regional sales manager have been appointed for "Scotsman" ice machines, R. J. Lickteig, sales manager, American Gas Machine Co., announced.

They are: C. E. Reed, of Washington, D. C., national service manager, and L. A. Burbank, Lynnfield Center, Mass., regional sales manager for the northeastern part of the country.

Reed was formerly service manager for the Washington Refrigeration Co. of Washington, D. C. He was also associated with Jack and Heintz Precision Industries, Inc.

Burbank was sales engineer with Melchoir Armstrong Dessau Co., Inc., of Richfield, N. J. for nine years.



NEW Copeland 10-hp. condensing unit has refrigerant-cooled motor-compressor and shell-and-tube condenser.

Copeland Develops 10-Hp Condensing Unit for Air Conditioning Uses

SIDNEY, Ohio—Development of a 10-hp. "Copelametic" condensing unit for air conditioning and other high suction pressure applications is announced by Copeland Refrigeration Corp.

Heart of the unit is Copeland's new refrigerant-cooled, 10-hp. Copelametic motor-compressor. The condenser is water-cooled shell and tube type, and design of the condensing unit permits either packaged or remote installation.

Fully assembled, the unit measures 31 1/8 in. high, 20 in. deep, and 53 in. long, including the condenser water inlet connection. The condenser-receiver can be easily hooked up in a cooling tower installation, the company pointed out.

The three-cylinder motor-compressor has a 2 3/16-in. bore, 2-in. stroke with a refrigerant capacity of 1,375.0 c.f.h. at 1,750 r.p.m., Copeland said.

Other Copelametic condensing units for air conditioning applications featuring air-cooled oversize condensers with refrigerant-cooled motor-compressors are available in 2, 3, and 5-hp. models.

Kennard Names Lashley

ST. LOUIS—W. L. Lashley & Associates has been appointed sales representative in Houston and the surrounding trade area for Kennard Corp. here.

The firm will represent Kennard on its entire line of air conditioning products. Walt Lashley is principal of the company.

THERE IS A BROWNING ICE STORAGE BIN FOR EVERY MODEL AUTOMATIC ICE MACHINE

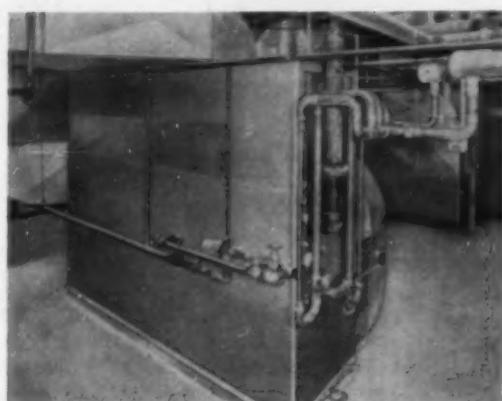


Mr. Ice Machine Dealer:

SELECT PROVEN TOP QUALITY
ALUMINUM OR STAINLESS STEEL

BROWNING
CUSTOM — BUILT
ICE STORAGE BINS

BROWNING COMPANY
651 WELLS STREET, S. W.
ATLANTA, GA.



PART OF the J. C. Penney Co. installation of Northwood Shopping Center in Royal Oak, Mich. includes these two Recold UVT-280 air conditioning units, situated in the basement.

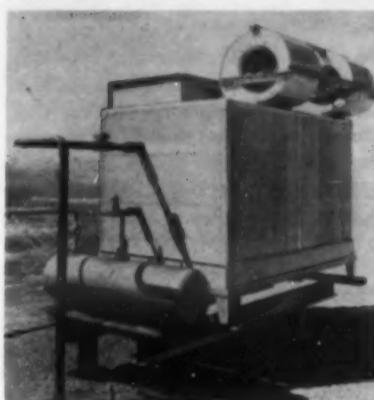
10 New Shopping Center Stores Use Conditioning To Attract Customers

ROYAL OAK, Mich.—Merchants in the recently completed Northwood Shopping Center in this Detroit suburb are apparently in agreement with the theory that it is easier to get customers into a store and make them linger longer if it is air conditioned, for 10 of the stores have installed comfort cooling systems.

The Recold air conditioning equipment installed in the 10 stores handles over 375 tons of refrigeration, and 142,000 c.f.m. of air. There are 13 air-handling units, and seven "Dri-Fan" condensers, also made by Refrigeration Engineering, Inc.

Installations vary according to the needs of each store and space conditions. A Dri-Fan condenser which services the Kroger Co. food supermarket is mounted out of the way on the store roof. This type condenser, of galvanized construction, is weather-proofed both inside and out. A further safeguard against internal rust and corrosion is the construction of the condenser, which is such that instead of pulling moist air through the fan section, it pushes dry air through the section.

Stores in the new shopping center which are air conditioned include F. W. Woolworth, J. C. Penney, Lerner Shops, Kroger, Pringle Furniture, Fromm Hard-



THIS ROOF-MOUNTED Recold "Dri-Fan" condenser is part of the Kroger installation at Northwood. The photo shows how fans push dry air through the unit instead of pulling moist air through.

ware, Cotton Shop, Pam's Restaurant, Kinsel Drug, and Youth Center.

Charles R. Beltz & Co., was the contractor making the installations.

Cleveland Branch Store To Be Fully Conditioned

CLEVELAND—May Department Stores Co. announced plans to build a completely air conditioned three-story suburban branch of William Taylor Son & Co., May's downtown department store here.

David H. Scholl, a May vice president and general manager of Taylor's, said the new branch will be built in the Southgate Shopping Center, located about 15 miles south of downtown Cleveland.

Construction is expected to begin early this fall.

Mountain Top Hotel Cuts Humidity with Central Station Unit

READING, Pa.—Even mountains get hot on sizzling summer days so a local air conditioning contractor recently completed installation of a unit to "air condition" a mountain top.

Bender & Shoemaker, Carrier Corp. representatives, air conditioned Galen Hall hotel and Country club guest rooms with individual controls for separate temperature selection atop the South Mountains in the heart of the Pennsylvania Dutch country.

The Carrier central station system was installed without taking away any of the hotel's usable space.

Daniel Burack, managing director of Galen Hall, whose family has been operating the resort near Wernersville, Pa. for 21 years, is also studying plans to air condition the clubhouse of the 18-hole golf course.

Burack wanted to avoid many alterations in the existing building, to conserve space, and a system that would reduce humidity with relatively small temperature reduction.

So Bender & Shoemaker mounted units in the top of clothes closets in each guest room, discharging the conditioned air over the top of the closet door through grilles.

Each room has separate controls on the closet wall, with four different selective positions. One position enables a bellboy to cool a room in 10 minutes, preparing it for a guest's arrival.

"Humidity was our biggest problem," said J. P. Bender of the contracting firm. "In summer the mountain air is hot in daytime, cool at night. Galen Hall's 3-ft. thick stone walls also keep humidity up."

The central station system reduces humidity with relatively small temperature reduction, Bender added. "The system is located so all disturbing noises have been eliminated."



Pictured here: An actual user of Ultra Solvex

High Head Pressure? Poor Heat Transfer?

Ultra Solvex Cleaner, used in cooling towers, shell and tube condensers, and "evaps," quickly and safely removes the usual causes of high head pressure and poor heat transfer . . . while the equipment is in operation. With Ultra Solvex, deposits of scale, algae, grease, slime, and dirt are disintegrated to harmless sludge, easy to drain from the system, and head pressure usually returns to normal in fifteen to forty-five minutes.

Ultra Solvex is safe to use, as well. There's no danger to operator or equipment. Actually, Ultra Solvex aids in preserving metals. Check your equipment now . . . if yours is a tough cleaning job, get Ultra Solvex—the rapid, versatile, safe cleaner.

Solvex MAINTENANCE FORMULA stops corrosion and retards scale formation and algae growth in newly-installed or just-cleaned cooling towers and evaporative condensers. Available in tablet or granular (bulk) form. Get all Solvex products, and "CC COATING"—the specially prepared protective coating for metals, wood, concrete and masonry—at your wholesaler's, or write:

CHEMICAL SOLVENT CO.

3005 N. 16th Street

P. O. Box 487

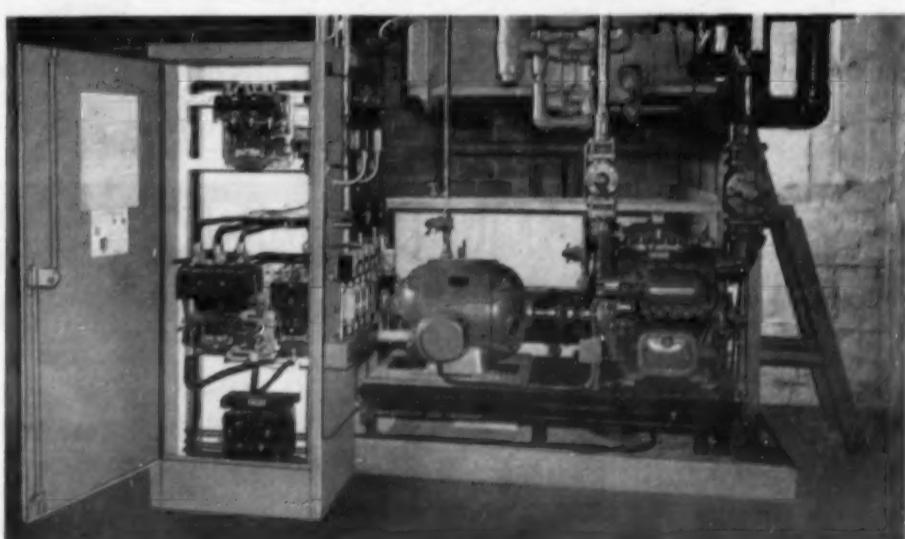
Birmingham, Ala.



The Sign of
QUALITY
MOTOR CONTROL

Bulletin 746

Magnetic autotransformer-type starter. Max. ratings: 300 hp, 220 v; 600 hp, 440-550 v. Available also as a manually operated starter.



Allen-Bradley Reduced Voltage Starters Will Satisfy the Customer and — the Power Company

When you have an air-conditioning compressor that must be started . . . without noticeable voltage fluctuation or lamp flicker . . . the A-B Bulletin 746 automatic autotransformer starter is the right answer!

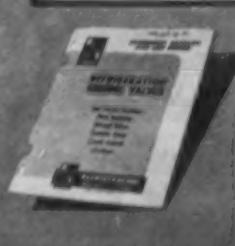
The solenoid contactors, having only one moving part, guarantee trouble free operation. The double break, silver alloy contacts are always in perfect operating condition. Accurate and dependable overload relays protect the motor against burnouts. You can install the Bulletin 746 starter — and forget it. Better send for Bulletin 746.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
In Canada — Allen-Bradley Canada Ltd., Galt, Ont.



For more information about products advertised on this page use Information Center, page 30.

Size and Port	GPM Flow Capacity for various water pressure drops			Nominal H.P.
	10 PSI	30 PSI	50 PSI	
1 1/2" - 6V	42	72	92	30, 40
1 1/2" - 8V	53	90	120	50
2" - 6V	65	114	147	60
2" - 10V	76	132	167	75
3" - 6V	132	225	280	100
3" - 8V	165	280	370	150
4" - 6V	220	370	480	200



*Nom. HP based on 1 1/2 Gpm/HP @ 20 Psi drop

Unlike a direct bellows powered regulator, this large pilot-operated regulator will provide full flow of water within a condenser pressure rise of 10 lbs.

**REFRIGERATING
SPECIALTIES COMPANY**

3004 W. LEXINGTON ST. CHICAGO 12, ILLINOIS



Emergency Diagnosis, Repair of Hermetic Unit Electrical Components (1)

Effect of Suction and Discharge Pressures on Motor Load Points To Preventive Measures

There's absolutely no need for a serviceman to be stumped by electrical troubles on hermetic units, points out John L. Zant, representative of Copeland Refrigerator Corp. With a little effort the serviceman can learn what each component of the electrical circuit is supposed to do and how to diagnose difficulties.

In giving the following talk and demonstration before various groups Zant not only explains the functions of the electrical components but also reveals some temporary repairs that can be used in emergency.

This is the first instalment of Zant's discussion.

By John L. Zant, Copeland Refrigeration Corp.

At present, almost all factory-installed compressors in self-contained air conditioners, market fixtures, beverage coolers, ice cream freezers, packaged water chillers, and such products are of the hermetic type. In addition, there has been a pronounced trend toward the use of hermetic type compressors for field-installed systems.

As a consequence, due to the increasing predominance of hermetic systems, refrigeration servicemen are finding it necessary to familiarize themselves with the peculiarities of such system as compared to open-type systems.

From a refrigeration standpoint there is little difference between systems incorporating hermetic compressors as compared to the open type. The

main difference is in the electrical phase of the equipment. With an open-type unit the compressor and motor are separate components, and if motor failure occurs or a compressor seizes, it is a simple matter to find which is the case. And if motor failure is the cause of trouble, it has been the practice of most service contractors to replace the motor.

From the trouble diagnosis angle open-type units have this advantage over hermetic units. But the elimination of shaft seals and drive belts, the reduction in space requirement, and the general reduction in vibration has more than off-set the above mentioned feature of belt-driven units. So whether a serviceman personally prefers hermetic-type systems or open

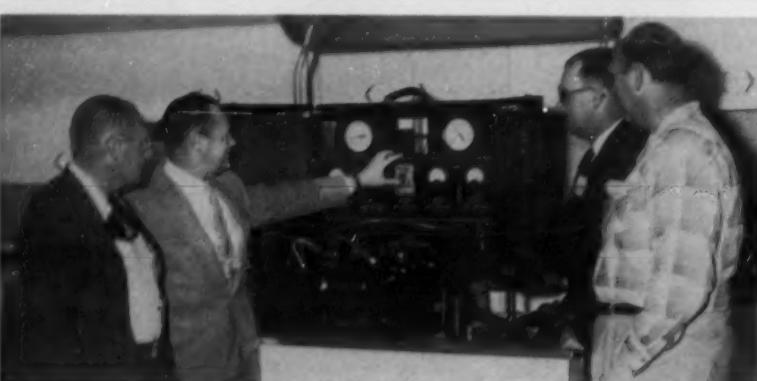


FIG. 1—Demonstration unit helps John L. Zant of Copeland explain hermetic electrical problems and diagnosis to contractors and servicemen. Here Zant (second from left) is explaining the setup to Leroy Niles, Harold Erikson, and George Park during an RSES meeting in Yuma, Ariz.

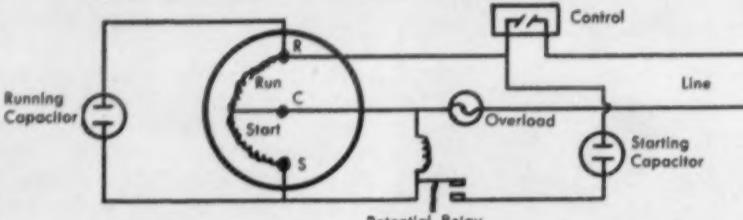


FIG. 2—This wiring diagram is typical of integral horsepower single-phase hermetic units.

type, industry trends largely suction and discharge pressures. These govern the type of equipment he is called upon to maintain and service.

Study Electrical Systems To Understand Functions

Many refrigeration servicemen feel confident of their ability to diagnose any refrigeration trouble they might encounter but seem to feel incapable of learning how to diagnose electrical troubles. However, if such servicemen would take a little time to study the electrical systems and understand the function of each component, I'm sure they will find they do not need to be electrical geniuses to diagnose the majority of electrical troubles that may occur.

The demonstrations which follow are designed to take the mystery out of the electrical system and allow you to observe the function and effect of each component and electrical accessory of this typical system.

This demonstration unit (Fig. 1) consists of a 1-hp. single-phase "Copelamatic" condensing unit and evaporator so arranged to permit rapid adjustment of

The wiring diagram (Fig. 2) of this 1-hp. single-phase unit is typical of integral horsepower single-phase systems.

(The wiring diagram was then developed, explaining in turn the function of the running winding of the motor, the control, the starting winding, the starting capacitor, the relay, the running capacitor, and the inherent overload).

Reasons for Unit Being Selected

This unit was selected for these demonstrations as the high-torque, capacitor-run motor-compressor has perhaps the more complicated electrical system in comparison to the split-phase (low torque) or three-phase types. The latter do not require all the accessories used in the single-phase capacitor-run type so an understanding of this system should qualify one to diagnose troubles

encountered with the others. We will now proceed with the demonstrations.

1. Effect of suction pressure on motor load.

The suction pressure is adjusted to approximately 0 p.s.i.g., corresponding to an evaporating temperature of -21.6° F. ("Freon-12"). This might be the condition for applications such as ice cream cabinets, frozen food storage and such average "low temperature" applications. The Copelamatic motor-compressor used in these tests, a model KL-100C, is designed for just such usage.

How Comparison Is Made

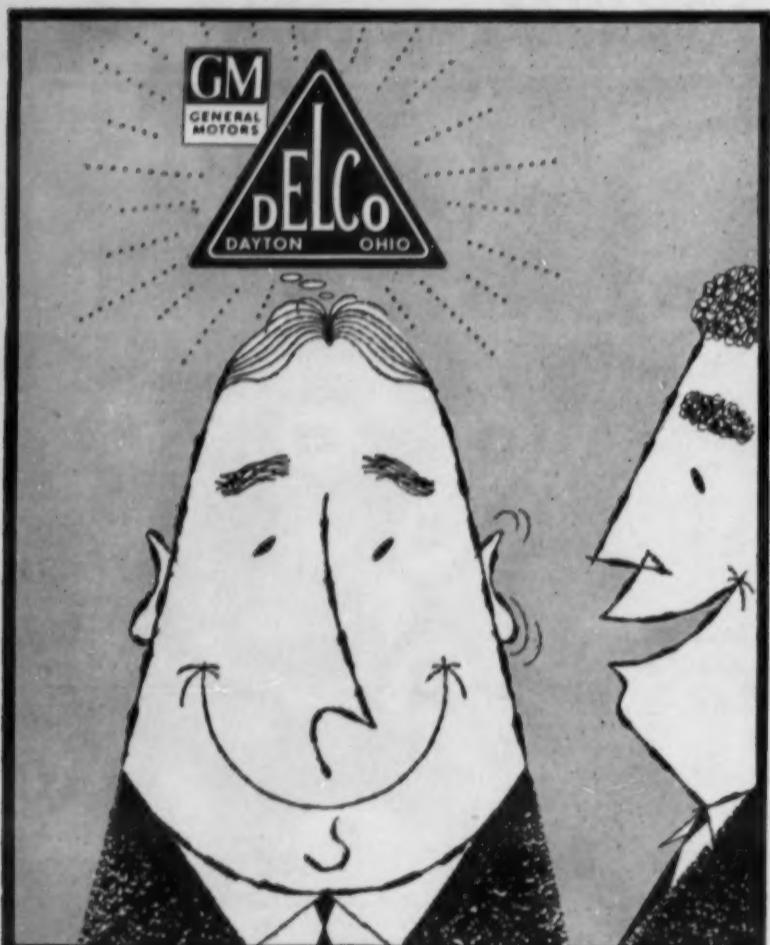
Now with the discharge pressure adjusted to 100 p.s.i.g. we will read the motor current and wattage. We will then raise the suction pressure to 25 p.s.i.g. (25.3° F. evaporating temperature) comparable to "medium temperature" applications where refrigerator temperatures of 35 to 40° F. are maintained, leaving all other conditions the same. Readings of motor amperes and wattage are again taken and compared with those previously read. The comparison is as follows:

Suction Pressure	Discharge Pressure		
p.s.i.g.	p.s.i.g.	Amps.	Watts
0	100	4.8	850
25	100	6.5	1240

Thus it may be seen that in going from 0 p.s.i.g. suction pressure to 25 p.s.i.g., the discharge pressure constant, the motor amperage increased approximately 36%. This test explains why a medium temperature unit must have less compressor displacement than a low temperature unit of the same horsepower—to prevent the motor from being overloaded.

If we increased the suction pressure further, say to 35 or 40 p.s.i.g., such as prevails for air conditioning applications, you would note a further increase in motor load. That is why "high temperature" units must also have less displacement than "medium temperature" units for the same horsepower.

(Continued on next page)



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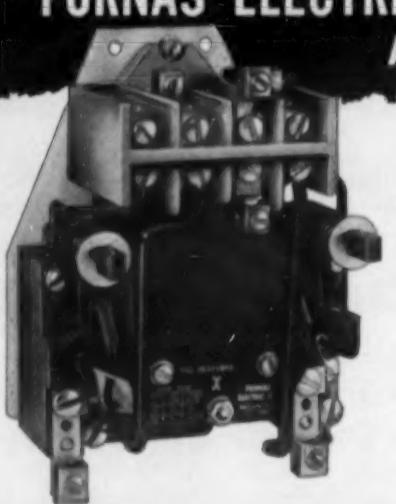


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Electrical Components--

(Continued from preceding page) power to operate the unit.

Phenomena Explained

The exact reason for this phenomena is that as suction pressure increases, the density of the gas increases and it takes more work to compress a given volume of gas. So to compensate for the increased work of compression, per cubic foot of gas pumped, the displacement of a compressor is reduced for a given horsepower size as the suction pressure range goes from low to medium and again from medium to high. This is conventionally done by changing the compressor speed, bore, stroke, or number of cylinders.

2. Effect of discharge pressure on motor load.

With the suction pressure held constant at 10 p.s.i.g. let us now note the effect of increased discharge pressure. Ampere and wattage readings will be taken at discharge pressures of 125 p.s.i.g. and 200 p.s.i.g. The results are as follows:

Suction Pressure p.s.i.g.	Discharge Pressure p.s.i.g.	Amps.	Watts
10	125	6.0	1130
10	200	6.7	1300

It can thus be seen that a noticeable increase in motor load occurs with an increase of 75 p.s.i.g. discharge pressure. In addition to the increase in wattage (what the user pays for), a reduction in refrigerating capacity also results. Thus the unit not only becomes costlier to operate, per hour of operation, but the running time increases. This demonstration brings out the importance of keeping condensers clean, providing good ventilation, avoiding scale in water-cooled condensers, etc. A little maintenance to insure good condenser operation will pay dividends in reduced overall operating costs.

3. Effect of running capacitor on motor current.

The running capacitor is used to improve the power factor of the motor. For a given voltage and motor load the higher the power factor, the less the amperage becomes. Thus, for the larger size single phase motor-compressor it is customary to use capacitor-run motors, thus reducing the current. The advantage is that smaller size wire can be used for the line; controls, switches, and such devices of lower current rating can often be used, and less line voltage drop occurs.

Capacitor, Induction-Run Relative Current Compared

As an indication of the relative current of capacitor-run vs. induction-run motors, the 1-hp. Copelametic, which is capacitor-run, has 5.0 amp. full load current rating while the 3/4-hp. 230-volt Copelametic which is induction-run, has 5.1 amp. full load current rating.

In this demonstration system we have a switch in the running capacitor circuit. Under the conditions of operation note the current is 6.0 amperes. Now I will throw the switch, taking the running capacitor out of the circuit. The current then jumps to 8.0 amp. Thus it is proved that without the running capacitor

Brunner Co. Appoints Heathman Service Mgr.

UTICA, N. Y.—Charles M. Heathman, recently a Brunner Mfg. Co. sales representative in the Chicago area, has been appointed service manager of subsidiary Brunner Co., Gainesville, Ga., according to A. G. Zambrun, Sr., president.

Heathman will be responsible for coordination of field service, parts distribution, returned materials, and warranties on all "Brunner-Metics," semi-hermetic condensing units, and motor compressors manufactured in the Georgia plant.

A member of the American Society of Refrigerating Engineers and Refrigeration Service

Engineers Society, Heathman has held positions in the engineering, production, and service departments of Servel, Inc., and was district sales manager for that firm in the eastern, southeastern, and west-central territories before coming with Brunner.

Trane Names Woodward As N. Y. Sales Engineer

LA CROSSE, Wis.—Announcement is made by the Trane New York City sales office that Henry E. Woodward has been added to its staff in a sales engineer capacity.

According to B. E. Menden, manager of the office, Woodward will concentrate on assisting consulting engineers in the area, on air conditioning, heating, ventilating, and heat transfer equipment jobs.

During the past seven years, Woodward was a district sales representative in Detroit.

Houdaille Diversifies, Names Peo to Dual Role

BUFFALO—Ralph F. Peo, president of Houdaille Industries, Inc., has been elected chairman of the board and will serve in both capacities.

Peo, as chairman, succeeds Charles Getler, who was associated with one of the original companies that formed Houdaille-Hershey Corp., and who is retiring from active business.

Houdaille Industries is engaged upon a program of diversification to add to the refrigeration, automotive, aviation, automatic lubricating equipment, projectiles, small arms, custom forgings, hand tools, silencers, and stone products produced in its plants in Buffalo, Detroit, Chicago, North Chicago, Huntington, W. Va., Cleveland, Decatur, Ill., and Oshawa, Ont., Can.



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Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



Latent Heat Source For Hot-Gas Defrosting (2)

(Continued)

As in simple hot-gas defrost systems, the defrost line of this vapor defrost system is run from the compressor discharge to the evaporator coil inlet just beyond the expansion valve outlet.

An electric solenoid valve is located in the defrost line.

DEFROST CYCLE IS TIMER STARTED, THERMOSTAT TERMINATED

An electric timer is provided to open the solenoid valve to start defrost as often as desired, but instead of the timer closing the solenoid valve to stop defrost, thus controlling the defrost purely on a time basis, a separate thermostat stops defrost by cutting off the electric current going to the solenoid valve.

This thermostat is the remote bulb type, with the bulb attached to the outlet of the evaporator coil at about the same

location as the bulb of the TX valve.

When the coil has been completely defrosted, it is warm enough to effect the bulb of the defrost thermostat which then closes the solenoid valve. Thus, defrosting is started on a predetermined time basis, but is ended thermostatically when the coil is warm enough to assure that it is completely defrosted.

Except for automatically terminating defrost, the above sounds very much like any other hot-gas defrost method. Wherein then, lies the difference? The difference lies in the action of the Bleed Tube in the Vapot as shown in Fig. 1.

During defrost, the "hot-gas" tends to condense in the cold evaporator coil just as in conventional hot-gas defrost systems. However, some of the liquid thus formed in the evaporator passes on into the latent heat comparatively large, but it is continuous throughout

especially designed accumulator. The Bleed Tube picks up some of the liquid and introduces it into the U tube so it is carried into the suction line along with the gas coming from the Vapot.

BLEED TUBE SUPPLIES LATENT HEAT

In fact, the Bleed Tube is sized so that it picks up quite a bit of liquid; not only enough to keep the suction gas saturated but enough that when the suction gas (really a saturated vapor) enters the compressor, it contains some droplets of liquid refrigerant.

These tiny droplets vaporize in the compressor and cool the compressor, but more important for the defrost cycle, in vaporizing they provide *latent heat* that serves as the source of heat for continued defrosting.

Not only is the amount of latent heat comparatively large, but it is continuous throughout

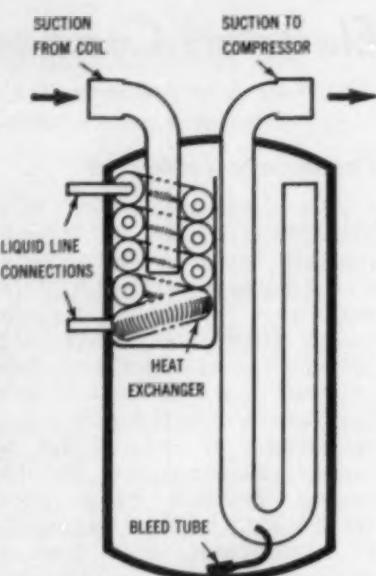


FIG. 1—An accumulator with a liquid "injector" and built-in heat exchanger.

the defrost cycle, for the Bleed Tube continues to take liquid out of the Vapot and feed it to the compressor throughout the defrost cycle.

Therefore, this system does not "run out of heat," for it continues to get a supply of latent heat from the tiny droplets of liquid brought into the compressor.

Since the compressor is kept cool by the evaporation of these droplets, the discharge gas is very little superheated above condensing temperature. The temperature of the discharge depends on how much liquid is injected into the suction gas by the Bleed Tube.

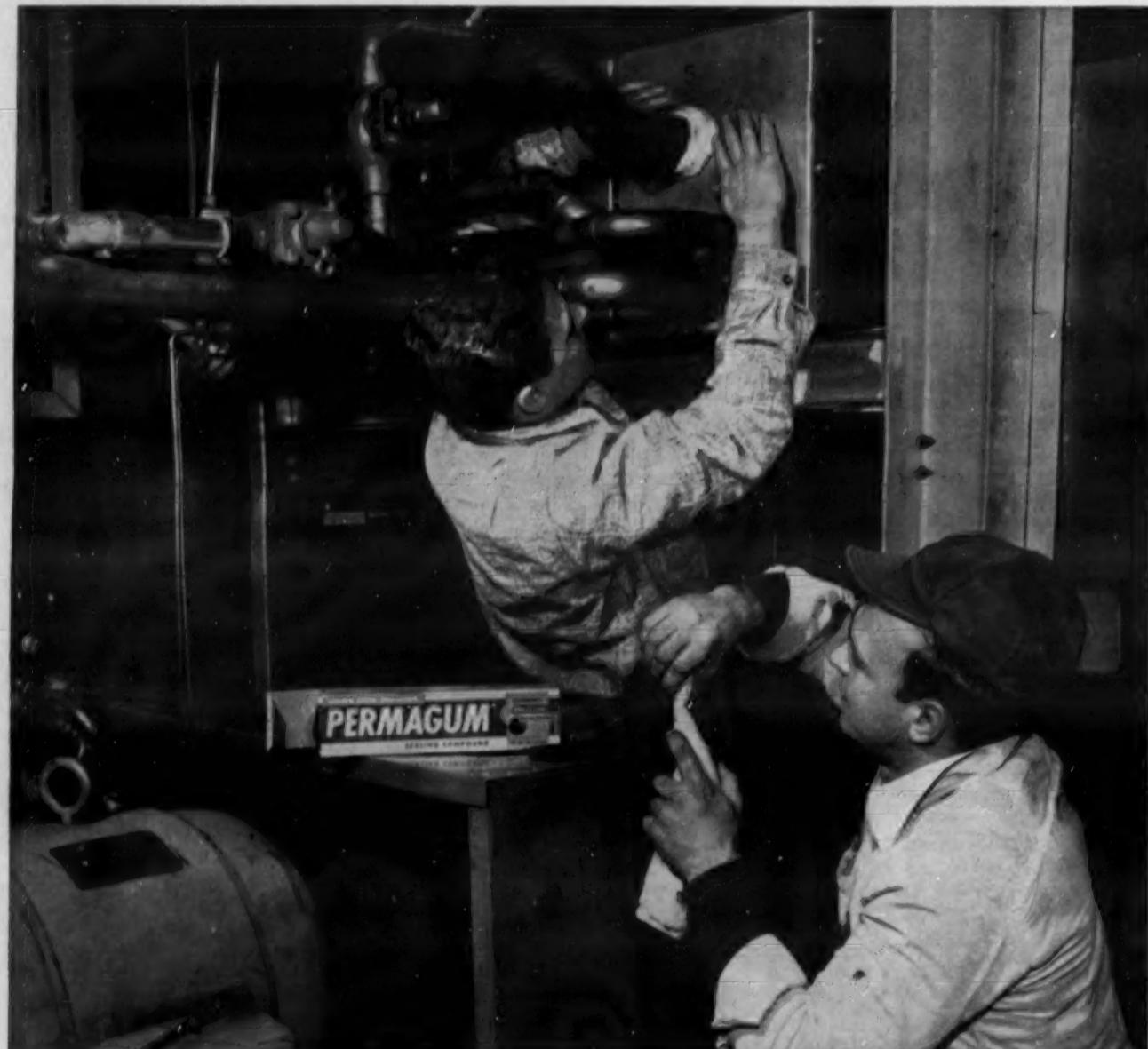
WET COMPRESSION

Fig. 3 may make this a little clearer. This shows part of a Mollier chart for "Freon-12" (or "Genetron-12"), although about the same holds true for "Freon-22" (or "Genetron-141") or for that matter any other refrigerant. This will be recognized as typical of "wet-compression" for the suction gas coming to the compressor is not only a saturated vapor but is "super-saturated," for it contains droplets of liquid. These droplets of liquid furnish the latent heat which is the source of heat for defrosting.

Point "A" on the chart in Fig. 3 is in the region of partial vapor and partial liquid, for it is to the left of the saturated vapor line. Point "A" indicates the approximate condition of the liquid-vapor in the cylinder when the defrost cycle starts at, for example, 0° if the discharge temperature were 100°, that is, saturated and at the same temperature and pressure as the condenser.

The distance from "A" to the saturated vapor line to the right, indicates the heat content of the liquid in the rich

(Concluded on next page)



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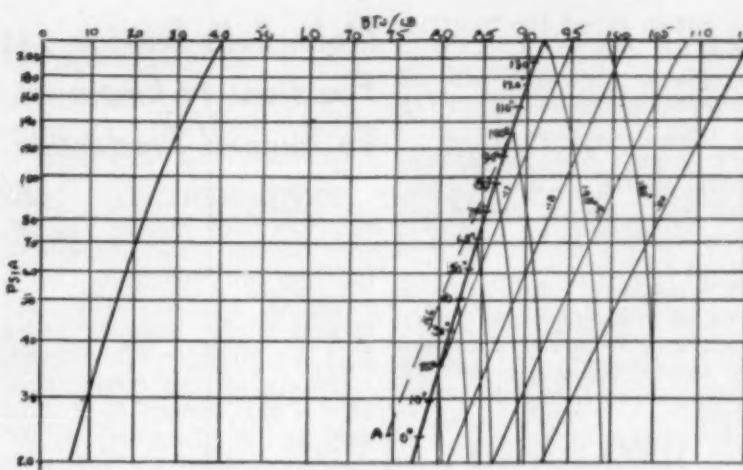


FIG. 3—Pressure-enthalpy Mollier Chart for "F-12" showing the effect of wet compression due to injection of a small amount of liquid refrigerant into the cylinder during the suction stroke.

Latent Heat Source --

(Concluded from preceding page) mixture, of about 3 B.t.u. per pound. However, the large source of heat is the latent heat that becomes available when the liquid vaporizes in the cylinder. At 0° this amounts to about 70 B.t.u. per pound.

The dash line represents the heat content of the liquid-vapor mixture during compression. This is based on an entropy of approximately .166, so that the compressed gas leaves the cylinder as a saturated vapor at 100°. In actual operation, the dash line will be to the right of the position shown, and the discharge from the compressor will be somewhat superheated and to the right of the saturated vapor line.

The position of Point "A" depends chiefly on the sizing of the Bleed Tube, and how much liquid it injects into the liquid line. Therefore, the sizing of this tube is important, for it must pass enough liquid to provide the necessary latent heat for defrosting, but never more than can be completely vaporized in the compressor.

As defrosting progresses, and as the evaporator warms, Point "A" tends to move upward along the dash line. Also the dash line tends to move to the left, as the mixture tends to become richer in liquid. Later, it tends to move back toward the right, and more closely approach the saturated vapor line.

The question will of course arise "Yes, but what about the compressor; will it not be damaged by the liquid?" The answer is that it could be if the amount of liquid in the suction gas were excessive, but as long as no more liquid is introduced than can be vaporized in the compressor, there is no danger to the compressor.

It is therefore evident that the Bleed Tube must be rather carefully sized to the installation; big enough to assure that about the right amount of liquid be introduced into the suction line and compressor, and yet not enough that there is danger of liquid slugging.

FOLLOW MANUFACTURER'S INSTRUCTIONS

For this reason, the manufacturer furnishes a specified Vapot for each of their evaporator coils, and in that manner controls the Bleed Tube action, depending on the size and capacity of the installation.

Also the manufacturer's recommendations should be followed as to the sizes of the

the Bleed Tube should be correct for the compressor.

It will be observed that the suction line will be cold during the defrost cycle, for its temperature will be about the same as the defrost temperature. Certainly its temperature is likely to be below the dewpoint temperature of the room.

If for this reason only, the suction line should ordinarily be insulated. Moreover, superheating in the suction line is to be avoided, for it will vaporize the droplets of liquid in the suction line, and this entirely offsets the principles on which the vapor-defrost system is based.

Santoro Bros. Opens Showroom, Warehouse

BROOKLYN—Santoro Bros., Inc., air conditioning and refrigeration concern, has announced the opening of its new showroom and warehouse at 932 Ditmas Ave. here.

The most prominent feature in Wolverine's exhibit was a large treasure map with product display boards shaped like a treasure chest.

Wolverine developments that were displayed included Wolverine "Trufin," the integral finned tube; "Spun End" parts; Wolverine "Tuffbraze," brazed steel tube; Wolverine "Capilator," tubing for restriction purposes, prefabricated aluminum assemblies; U-bend condenser tube packaging and other packaging innovations, the report noted.



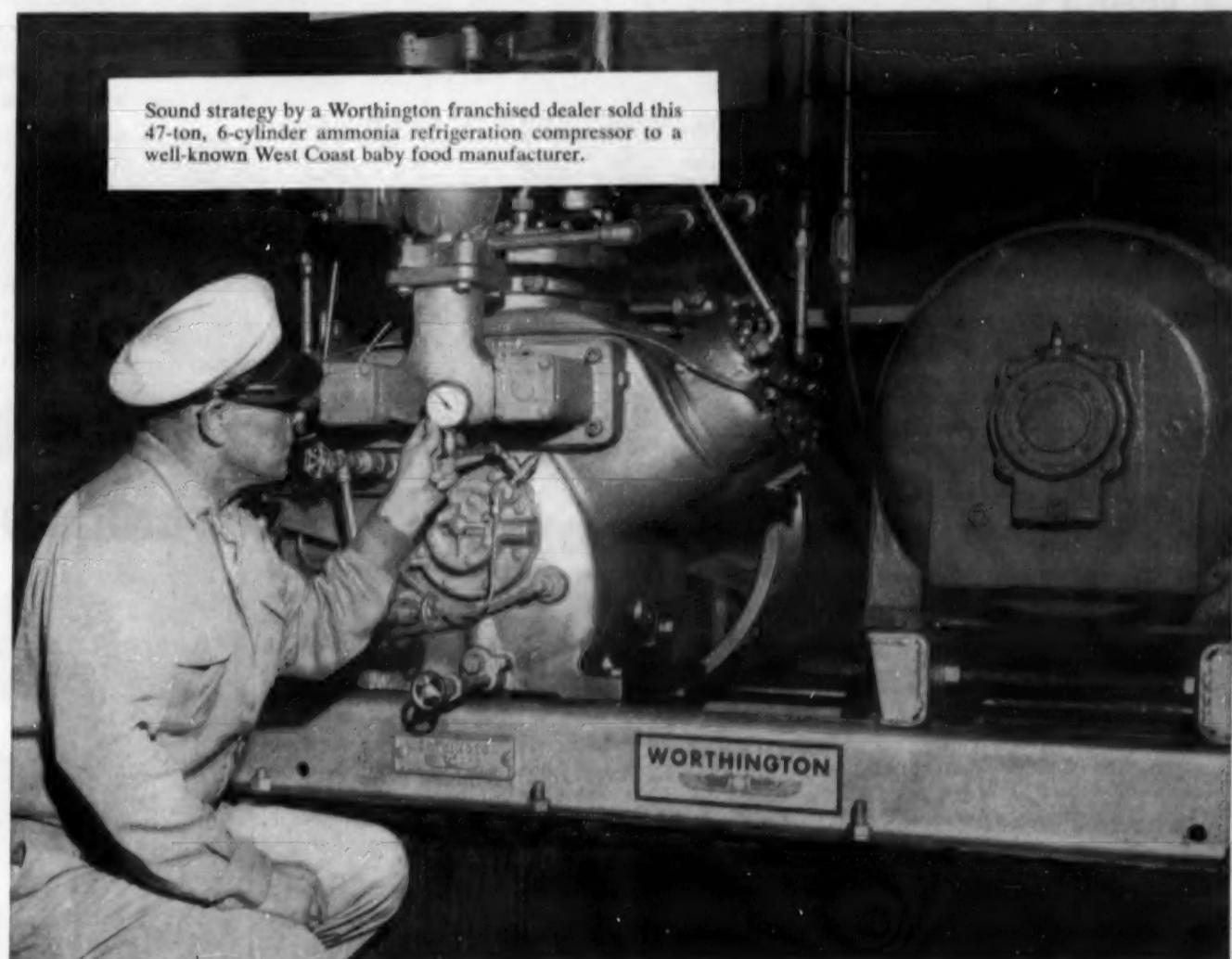
R. T. Thorpe

WEST HARTFORD, Conn.—Bush Mfg. Co. and Heat-X, Inc. have announced appointment of Robert T. Thorpe as a sales engineer to cover the North Boston, New Hampshire, and Maine area.

A graduate of Northwestern University with a mechanical engineering degree, he was previously associated with

Melchior, Armstrong, Dessa Co. for six years as a sales engineer.

He is a member of both the American Society of Refrigerating Engineers and the American Society of Mechanical Engineers, the announcement concluded.



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A few territories are still open. If you'd like to know more about the possibility of becoming a franchised refrigeration dealer, get in touch with your nearest Worthington District Office. Or write to Section A6106, Air Conditioning and Refrigeration Division, Worthington Corporation, Harrison, N.J.

A6106

WORTHINGTON



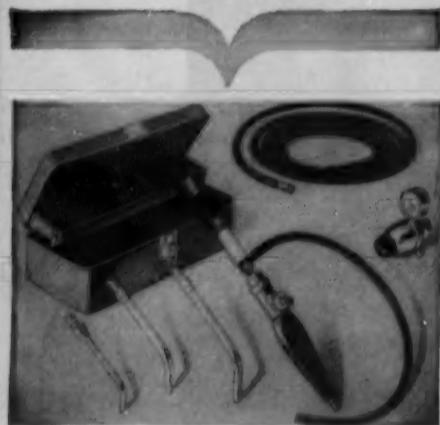
Carrier Names White To Engineering Post

SYRACUSE, N. Y.—Appointment of Arnold B. White as coordinator of engineering standards for Carrier Corp. was announced recently by Walter A. Grant, vice president of Carrier's central Research & Development Div.

A. B. White will be responsible for standardization activities carried out within that division's engineering standards department.

He comes to Carrier from Veeder-Root, Inc., manufacturer of counting and computing devices, where he served as standards engineer. Previously, White had been associated with the Pratt & Whitney Aircraft Div.

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Servicing Automobile Air Conditioners

BY C. DALE MERICLE

This is the second and final instalment describing the air conditioning system installed in Plymouth cars. Final make to be discussed in this series will be Artic-Kar.

Makes previously discussed have included A.R.A., Frigikar, Automotive Air Conditioning, Pivot, Novi, Oldsmobile, Buick, Pontiac, Chevrolet, Ford, Nash, Mark IV, Mobil-Aire, Lincoln-Mercury, and Chrysler.

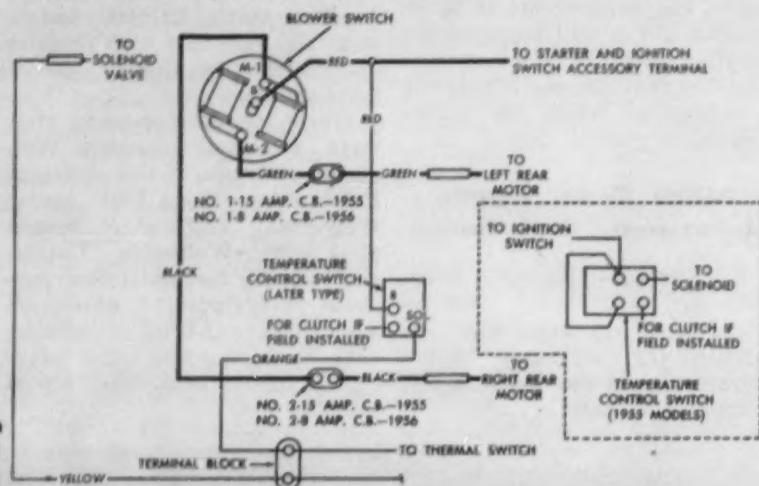


FIG. 3—Wiring diagram for 1956 Plymouth air conditioning system.

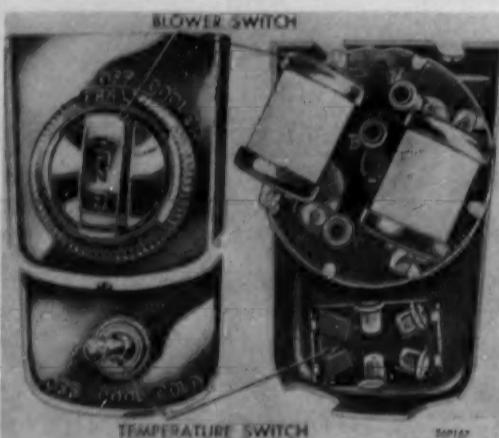


FIG. 4—Blower and temperature controls are mounted in vertical panel for Plymouth systems. Panel cover is at left. Internal parts are shown at right.

PLYMOUTH (2)

Plymouth Div.
Chrysler Corp.
Detroit 31, Mich.

Controls

Control circuits for the Plymouth air conditioning system can be followed in the wiring diagram shown in Fig. 3 (See above).

Note that there is a slight difference in the temperature control switch between 1955 and 1956 models.

Control switches (Fig. 4) for the Plymouth air conditioner are mounted on the car instrument panel to the left of the steering column.

There are two switches. Bottom one is a toggle switch which turns the system off or on and provides control of the amount of cooling done. Top switch is a rotating blower control which is actually a dual control like those found on television sets. Inner knob controls one blower motor; outer knob the other blower motor. The blower motors may be controlled individually with this arrangement.

Temperature control switch

(the bottom toggle switch) has three positions—"off," "cool," and "cold." A terminal is provided in this switch for control of a magnetic clutch if this should be installed in the field.

When the temperature control switch is moved to "cold," it closes the circuit to the thermostatic control in the evaporator and the solenoid by-pass valve.

The solenoid by-pass valve is normally open, allowing hot discharge gas from the compressor to enter the evaporator after the expansion valve. With the temperature control at "cold," the thermostatic control switch energizes and closes the by-pass valve, thus permitting maximum cooling effect.

The by-pass valve remains closed (energized) until the temperature of the suction line as sensed by the bulb of the thermostatic switch falls to approximately 30°. At this temperature the thermostat de-energizes and opens the by-pass valve. It remains open until the suction line temperature rises to approximately 45°, when the thermostat closes it again.

The by-pass valve remains open when the temperature con-

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trol switch is set for "cool" or "off."

Actually, the Plymouth air conditioning system operates all the time the engine is running even though the temperature control switch is turned "off." With the blowers turned off, however, there is no cooling of the car interior.

If a magnetic clutch has been installed in the field and properly wired to the temperature control switch, the compressor will not operate when switch is "off."

SERVICE HINTS

All the Service Hints given in the preceding article on the Chrysler air conditioning system also apply to the Plymouth system.

This includes evacuating and charging the system, operating pressures, superheat setting, and the trouble chart.

For Service Hints regarding Plymouth, therefore, readers are referred to the Service Hints section of the preceding article on Chrysler.

Amana Concludes Service Meetings

AMANA, Iowa—A series of five five-day service meetings for distributor personnel was held by Amana Refrigeration, Inc.

Led by Charles E. Nichols, service manager, the meetings stressed group participation including dismantling and service of freezers, freezer-plus-refrigerators, and air conditioners.

Nolin Sells Service Functions to Employees; To Expand Production

MONTGOMERY, Ala.—Nolin Brothers Refrigeration Co., Inc. here has announced the sale of its service department to a group of employees who have formed a new company called Alabama Refrigeration Service.

Officers of the refrigeration service firm include C. G. Conner, D. W. Lambert, F. W. Compton, and D. S. Thomas.

The firm will not only service and install equipment for Nolin Distributing Co., the distributing branch of the Alabama commercial refrigeration manufacturing firm, but will service all equipment which has been sold through this area in Nolin Brothers 25-year history.

The change was worked out after a long period of negotiation, according to A. C. Nolin, head of the manufacturing firm, as a means of permitting Nolin Brothers to concentrate entirely on expanding its manufacturing facilities. A new line of refrigerated display cases for meat has recently been added.

Nolin Brothers feels that the switch to a separate organization for service will benefit all parties concerned, it was stated.

Alabama Refrigeration Service will carry complete parts and repair facilities for 40 types of refrigeration equipment produced by the Nolin concern.



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These double-port, easy-to-see-thru units may also be had as flow indicators with flaps which respond instantly to flow variation.

Remco E-Z-SEE's range in size from $\frac{1}{4}$ -inch through $2\frac{1}{4}$ -inch O.D., and are available with flare or sweat connectors. For any size or application, E-Z-SEE is standard for *original equipment*.

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Hupp-Gibson--

(Concluded from Page 1, Col. 2)
approvals which enabled Hupp to acquire the business and assets of Gibson.

The stockholders of Hupp approved increases in the authorized amounts of preferred stock and common stock, portions of which were to be issued to Gibson in part payment for its business and assets. Gibson stockholders approved the sale to Hupp.

In a recent report, Don H. Gearheart, Hupp president, said all segments of the combined companies' air conditioning business are operating at record levels.

Reflecting Hupp's acquisition of Gibson assets and based on the trend of sales through April, Hupp expects to report record high profits for the first six months ending June 30 despite an operating loss suffered by the Perfection Industries Div. in the first quarter, Gearheart said.

He predicted that combined sales volume of Hupp and Gibson will exceed \$37 million in the first half this year.

Drayer-Hanson Sales Rise for 4 Months

LOS ANGELES — For the second consecutive year, Drayer-Hanson, Inc., air conditioning equipment manufacturer, reports an increase in sales orders booked in the first four months of the calendar year.

Covered is the January through April four-month period just concluded with a rise of 48%. The figure for the same period in 1955 was a 30% climb over the previous year.

Fred E. Schmuck, national sales manager, stated that a help to this increase is heavy concentration of major jobs from all areas, particularly the hotel-motel, hospital, and industrial-commercial fields.

He cited Rocketyne, Canoga Park, Opelousas General hospital, Opelousas, La., American Bank and Trust Co., Dallas, and seven new hotels in Miami, Fla. as installations made. Upgrading is also noted, with stepped-up activity in "old" construction, especially in the hotel, markets, and office building fields.

Do you know the real HEAT PUMP story?**MANUFACTURERS' AGENTS****There's "Real Money" In Heat Pumps**

The market will expand 12 times in the next 2 years. We are pioneers and heat pump specialists with the broadest line in the field—nationally recognized.

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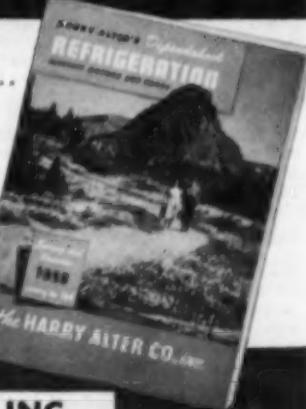
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U. S. Airco Plans Jordon Expansion--**Hallam Is Chairman Of Richmond ASRE**

(Concluded from Page 1, Col. 2)
which includes the appointment of Col. William Moiselle as vice president and general manager, John A. Cochrane as vice president, manufacturing, and Bernice W. Goodman as sales director, domestic products, the three principal operating posts.

Feinberg also revealed that the UsAirco subsidiary will discontinue production of commercial refrigerators at the end of May, making facilities available

for further increased domestic equipment production and to provide an East Coast point for future manufacture of the parent firm's line of packaged air conditioning units.

However, after June 1, the commercial units will be manufactured by a new and separate organization, the Jordon Commercial Refrigerator Co. The new firm has established its offices and plant at 2200 E. Kennedy St., Philadelphia.

Jordon production of freezers and combinations has been increased in each of the four months since it came under UsAirco control, Feinberg declared. Sales for April were up 25% over March and a similar increment is predicted for May.

A heavy program of advertising is planned for the Jordon 1956 domestic line, which includes three, upright freezers, an upright refrigerator-freezer combination, and five chest freezer models.

A warehousing plan has been established in nine key cities throughout the United States and a program is under way for expansion of this service.

The board of directors of Jordon includes Earl A. Darr, chairman, Francis A. Devin, Hiram S. Gans, Mortimer Burnside, and Feinberg, who has been elected president. All are members of the UsAirco board. Darr, Col. Moiselle, and Cochrane have been elected vice presidents. Other officers include George Kucera, treasurer, and H. W. Joyce, secretary.

Col. Moiselle joined UsAirco in 1946 and has served as works



MOISELLE



COCHRANE

GOODMAN

manager and assistant to the president. During World War II he served as a security and intelligence officer in the United States Army, prior to which he was president and general manager of Henney Motor Co.

Cochrane joined the engineering staff of United States Air Conditioning Corp. in July, 1955.

Bernice W. Goodman, the new sales director, domestic products, was formerly assistant to the vice president, sales, of Jordon Refrigerator Co.

RICHMOND, Va.—George W. Hallam was installed as chairman of the Richmond section, American Society of Refrigerating Engineers, at a dinner meeting here recently, it was announced.

Other officers elected to serve for the ensuing year are Charles H. Imel, Federal Reserve Bank, first vice chairman; George J. Wachter, Wachter and Wolff Corp., second vice chairman; and Howard A. Garber, Institutional Engineering Department of the State Budget Div., secretary-treasurer.

Hallam, a graduate of Wittenburg college, is originally from Dayton.

He has been connected with Minneapolis-Honeywell for the past 20 years, it was explained.

**HEAT INTERCHANGER**

Cast aluminum. Inner-Fin construction. No internal joints. Suction line and liquid line are separate tubes. $\frac{1}{2}$ to 10 Tons.

'CIC' CONDENSER

Cleanable tubes. Inner-Fins in refrigerant tubes for minimum size and maximum heat transfer. $\frac{1}{2}$ to 15 H.P. Also available for marine service.

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**HEAT-X PRODUCTS PROTECT
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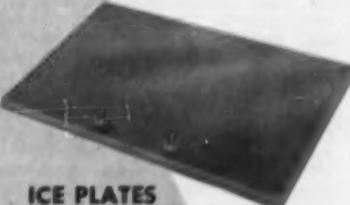
Any refrigeration job is only as good as its components. Reliable HEAT-X products, designed and manufactured by heat transfer specialists, insure the quality of your installations. They save you money, too, by cutting down on costly trouble-calls.

**LIQUID COOLERS**

Separate refrigerant and water circuits cast within solid aluminum block. No freeze-up damage.

**'CR' CONDENSER-RECEIVERS**

Cooling coils of copper tubing. Shell of steel pipe. $\frac{1}{2}$ to 5 H.P.

**ICE PLATES**

Stainless steel or copper tubing embedded in flat aluminum plate. Capacities to 40 GPH cooling from 80° to 40° .

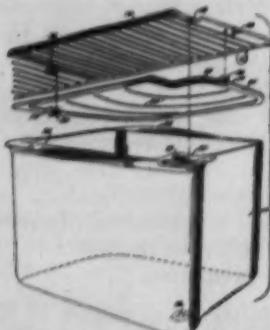
HEAT-X, Inc.

BREWSTER • NEW YORK

PATENTS

Week of November 22 (Concluded)

2,724,828. REFRIGERATOR HYDRAULIC AND MOVEABLE COVER. Milford J. Schrader, Greenville, Mich., assignor to Gibson Refrigerator Co., Greenville, Mich.



1. In a cabinet structure providing a storage space, a bin having an open top and being mounted for horizontal swinging movement into and out of said space, and a cover for said bin supported in the upper portion of said space for both vertical and pivotal movement and being supported at off-center points so as to cause said cover to tilt upwardly at its forward end when said bin is swung outwardly, the pivotal axis of said cover being below the top of said bin when the bin is swung out of said space, said cover being equipped with a plurality of spaced-apart ribs extending generally along the path of movement of said bin, said bin being provided adjacent the open top thereof with border portions extending laterally from the bin and being adapted to engage said ribs during movement of the bin and to form a seal with the edges of the cover when said bin is within said space.

2,724,830. EXTENSIBLE SLIDES FOR REFRIGERATOR SHELVES. Orson V. Saunders, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio.

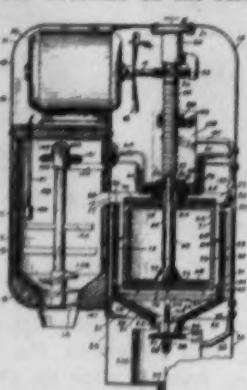


A refrigerator comprising in combination, a cabinet having a plurality of walls defining a food storage compartment therein, a shelf supporting unit carried by each opposed upright side wall of said compartment in spaced relation to the bottom wall thereof, each of said units including a mounting means secured to the compartment side wall and a set of extensible supports carried thereon, said extensible supports being disposed in side by side relationship, means interlocking said supports to one another and preventing detachment thereof from said mounting means, the one extensible support of each unit adjacent a side wall of said compartment having a shelf receiving projection extending upwardly therefrom in closely spaced relation to said side wall, the rear end of said upwardly extending projection on said one extensible support of each unit being directed laterally inward away from the compartment side wall adjacent thereto, a shelf separate from said extensible supports removably mounted upon said one support of each unit, said shelf having upwardly directed and rolled over side and back edges fitted over said projections and providing the sole means of tying said one extensible support of each unit together, said shelf also having a reticulated food receiving area extending across said compartment from a point closely adjacent one of its upright side walls to a point closely adjacent its other upright side wall above and in overlapping relation to said side by side sets of extensible supports, said one support of the set thereof on each unit being movable, upon applying a horizontal force to said shelf, relative to said mounting means and to the other supports of the sets thereof to position the shelf a predetermined distance outwardly of said means and to the other support of the interlocked set thereof on each unit being movable relative to said mounting means, upon applying an additional horizontal force to said shelf, to position the shelf a further distance outwardly of said compartment beyond said predetermined distance of outward movement thereof, and said shelf being at all times detachable from said projections on said one support without releasing said interlock between the sets of extensible supports of said supporting units.

drum carried into said tank; means for refrigerating the drum surface to temperatures below water freezing; means for revolving the drum in the water of said tank to build up a predetermined ice thickness on the surface of

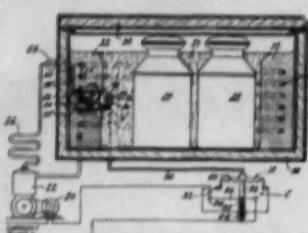
compartment, an open ended freezer compartment disposed within said food storage compartment, cooling coil means disposed about the walls of said freezer compartment for cooling

operable at a first temperature to be out of engagement with said abutment means to permit said control member to move to its inoperating position



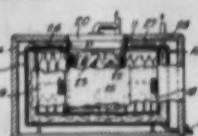
the drum; an ice removing member; means for carrying said member across said drum surface in a direction transversely of the direction of rotation thereof to remove ice from said surface and lifting it from the water; an ice storage chamber receiving ice from said member; means responsive to a predetermined high ice level in said chamber for rendering said refrigerating means inoperative when the ice reaches said level; said ice level responsive means also controlling travel of said ice removing member to return that member to an initial position across said drum for a subsequent ice removing travel thereacross.

2,724,860. ICE BANK CONTROL. John J. Rothwell, Goshen, Ind., assignor to a corporation of Indiana.



1. A control device for a cooling container of the type including a tank, an evaporator inside the tank in spaced relation to the walls thereof, a refrigerant system for the evaporator, water in said tank, a portion of said water adjacent the tank walls being frozen to form an ice bank by operation of the refrigerant system and cooling of the evaporator, and a pressure responsive actuating means to control the starting and shutting off of the refrigerant system, said control device comprising a pressure generating housing mounted inside said tank in spaced relation to the evaporator, a pressure responsive means in said housing dividing said housing into a first and a second chamber, means for transmitting pressure from said second chamber to said pressure responsive actuating means, and means communicating with said first chamber and said tank to provide entry of the water which forms said ice bank.

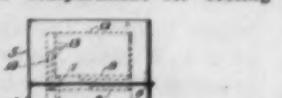
2,724,861. LIQUID COOLING DEVICE. Ambrosio Arce, Manila, Philippines.



A cooling device of the class described comprising an insulated casing, a primary cooling compartment having a relatively thin wall in said casing, a secondary liquid cooling compartment comprising a tank surrounding said primary compartment, said primary compartment having front, rear and bottom walls directly contacting the secondary liquid cooling compartment, the secondary compartment being inwardly spaced relative to said casing thereby defining a dead air space therebetween, a cold storage compartment upon opposite sides of said primary compartment and intermediate and contacting the primary and secondary compartments, a liquid cooling coil lining the primary compartment, the primary compartment being adapted to receive a cooling agent within the convolutions of said coil, a liquid feed pipe connected to one end of said coil, a liquid outlet pipe connected to the opposite end of said coil, means connecting said liquid outlet pipe of said coil to secondary compartment for delivering precooled liquid from said coil directly to said secondary compartment to supply cool water from the coil to said secondary compartment, and a drain off means for said secondary compartment.

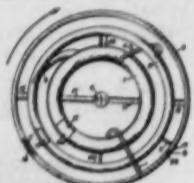
2,724,862. DUAL PURPOSE COMPARTMENT FOR REFRIGERATOR. Edward L. Benno, Skokie, Ill., assignor to International Harvester Co.

1. In a refrigeration system, a refrigerator cabinet having a food storage compartment therein, a cabinet door pivotally mounted to said cabinet for enclosing said food storage



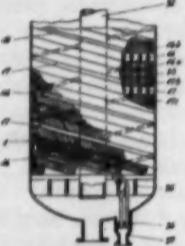
said freezer compartment, an open ended auxiliary compartment disposed within said cabinet door substantially in alignment with said freezer compartment when said cabinet door is closed, and compartment door means pivotally mounted to said freezer compartment and said auxiliary compartment for selectively enclosing the open ends of said freezer compartment and said auxiliary compartment to form two compartments with the air of each thereof substantially enclosed therein and independent from the air in said food storage compartment and for selectively enabling said cabinet door to be closed when a portion of said compartment door means is in an open position to form substantially one compartment with the air thereof substantially enclosed therein and independent from the air in said food storage compartment.

2,724,863. ROTATING REFRIGERATING DEVICE. Donald S. Justice, Washington, D. C., assignor to Justice Industries, Inc., Washington, D. C.



2. A rotating refrigerating device comprising: three concentric hermetically sealed hollow rings containing a refrigerant, said rings being interconnected by hermetically sealed passageways comprising: a first passageway from the inner ring to the intermediate ring, a second passageway from the inner ring to the outer ring, a third return passageway from said intermediate ring to said inner ring and a fourth passageway from said intermediate ring to said outer ring, and means for rotating said rings.

2,724,864. APPARATUS FOR THE OPERATION OF COLD ACCUMULATORS. August Mack, Frankfurt am Main, Fehrenheim, Germany, assignor to Adolf Messer G. m. b. H., Frankfurt am Main, Germany, a corporation of Germany.



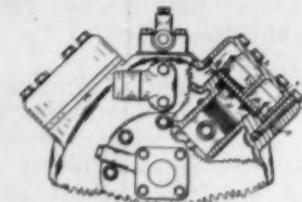
1. Apparatus for the cold exchange between a gas to be separated by liquefaction and rectification and the separation products comprising a pair of periodically reversible cold accumulators, each having a warm portion and a cold portion, the compressed gas to be separated passing through one accumulator from the warm portion to the cold portion and one of the separation products passing through the other accumulator from the cold portion to the warm portion thereof; means for interrupting the flow of said gases at the end of the predetermined period of time and compensating the pressures in said accumulators, means for exchanging the flows of said gases for other and special conduits within both accumulators for the other separation product to be recovered pure, these separation products passing from the cold portion to the warm portion of the accumulators independently of the flows of the other gases outside of the special conduits, the conduit within the accumulator being helically disposed around a hollow cylinder, and corrugated metal strips between successive turns of the coils and having a similar helical contour.

2,724,872. THERMOSTATIC CONTROLLED DEVICE. Donald Frederick Drow, Los Angeles, Calif., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

1. A safety device comprising a housing, a control member normally biased to an inoperating position, manually operable means extending through a wall of said housing and into engagement with said control member for moving said control member to an operating position, abutment means extending outwardly from said housing and engaging said control member for movement therewith between operating and inoperating position of said control member and being free to move laterally a slight distance, and a bimetal temperature responsive latch means having a guide portion and a latch portion, said latch portion being

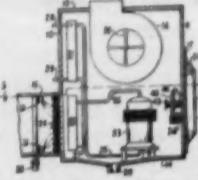
delivering water to said water spray means responsive to the operation of the solenoid of said solenoid valve, an electrical circuit including a power source and the solenoid of said solenoid valve and a switch, said switch formed to complete said circuit for the operation of said solenoid when said switch is closed, means operable to close said switch, said last-mentioned means operating responsive to a certain predetermined resistance of said air filter to air passing therethrough.

2,725,183. VALVES FOR RECIPROCATING COMPRESSORS. Lars Hanson, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



and at a second temperature to be in engagement with said abutment means to hold said control member in its operating position, said guide means being operable to urge said abutment means towards and away from said latch portion at said second and first temperatures, respectively.

2,725,117. AUTOMATIC AIR FILTER CLEANING APPARATUS. William P. Borgerd, Evansville, Ind., assignor to International Harvester Co.



1. In an air conditioning system, an air filter, water spray means operating responsive to the reception of water thereto for washing said air filter, means including a solenoid valve for

The combination with a reciprocating compressor having a cylinder containing a deck recess, a cylinder head having two compartments formed therein, and a ported valve plate placed between the cylinder and the cylinder head, of a discharge valve connected on the head side of the plate in one compartment, said discharge valve including a base adapted to be secured to the plate and three similar, flexible, finger-like means projecting from the base, each finger-like member terminating in a disk portion adapted to close a port through the plate, a stop adjacent said discharge valve to prevent movement of the finger-like members.

(Concluded on next page)

CLASSIFIED ADVERTISING

EQUIPMENT FOR SALE

AJAX ELECTRIC ICEMAN—Complete new parts stock available. Immediate delivery. Many prices under factory list. Write for price list. AJAX PHILADELPHIA, INC., 3617-23 Lancaster Ave., Philadelphia 4, Pa.

ARCTICAIRE AIR conditioning equipment 2, 3 and 5 ton packaged water chillers, air or water cooled. Direct expansion air conditioning systems 2, 3 and 5 ton, air or water cooled, self contained and remote types. Write for literature and prices. ARCCO, MANUFACTURERS AGENTS, INC., Merchandise Mart Bldg., 2201 Grand Avenue, Kansas City, Missouri.

FOR SALE: At less $\frac{1}{2}$ cost new Marlo 4 row Freon 12 coil—15 tons—24" high x 59" long face area—27 $\frac{1}{2}$ " high x 62" long overall. DX valve included. EDISON BROS. STORES, INC., 400 Washington Ave., St. Louis, Mo. Attn: J. C. Ryer.

POSITIONS WANTED

SALES ENGINEERING

POSITIONS AVAILABLE

OPPORTUNITY FOR manufacturer's representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reachins and walkins. We manufacture a quality line to meet competition. Territories now available, write HOWARD REFRIGERATOR CO., INC., 4745 Worth Street, Philadelphia 24, Pa.

FOR SALE: 1- $\frac{1}{2}$ " x 6 $\frac{1}{2}$ " Vilter machine, serial #A-431361 and one 9 x 9 York compressor, serial #23980. Both machines complete with electric motors, 220 volt, 3 phase, 60 cycle. 1—Sundh Electric Panel Board with starters and controls; 1—temperature recorder; 1—brine circulating pump; 4- $\frac{1}{4}$ " x 2" double pipe condensers. Both machines are now in operation and can be inspected. Will sell together or separately. FIVE TOWNS REFRIGERATION CO., INC., 2 Lawson Avenue, East Rockaway, L. I. New York.

FOR SALE: SELF contained Kesco automatic condensate water disposal pumps for air conditioners ice cube bins; at your local wholesaler. Available in 10 and 20 foot heads.

NEW YORK, Abco Refrigeration, 1615 Second Ave.

MT. VERNON, Eastern Supply, 521 East Third Street

SYRACUSE, Gould-Farmer Co., 1020 W. Genesee Street

WHITE PLAINS, County Seat, 111 Central Ave.

NEWARK, N. J., Tesco Distributors, 78 Boston Street

DAYTON, OHIO, W. H. Kiefaber Co., Refrigeration Dept.

SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street

SEATTLE, WASH., Refrigerative Supply, 204 W. Republican

TAMPA, FLORIDA, Leo S. Bosage Co., 1546 Franklin Street

HIGHLAND PARK, MICH., J. M. Oberc, Inc., 55 Oakman Blvd.

Distributors write to KESCO PRODUCTS CORP., Springfield Gardens 13, N. Y. for sample pump and literature.

AIR CONDITIONING value: 2 h.p. hermetic compressor F-12 230V. 1/phase HD200. 2 h.p. air cond. evaporator 23 $\frac{1}{2}$ " L x 10" H x 3 $\frac{1}{2}$ " W. 2 h.p. air cond. condenser 24" L x 24" H x 4 $\frac{1}{2}$ " W. Also included 2 ton F-12 T. X. Valve & dual pressure safety cutout switch. Complete matched component kit as described \$175.00. Freight prepaid anywhere in the continental U. S. A. WALTER W. STARR, 2633 Lincoln Ave., Chicago 13, Illinois.

UNUSUAL OPPORTUNITY for a refrigeration engineer is offered by Mid-west company in expanding program.

Manufacturers of refrigeration systems, air conditioners, and allied specialized products. Engineering background preferred. Send complete information and personal interview will be arranged.

Good working conditions with modern equipment and employees' benefits.

BOX A5546, Air Conditioning & Refrigeration News.

AIR CONDITIONING servicemen for heating or cooling year-round job. Attractive proposition for right men.

Work for one of the fastest growing companies in Midwest. Please give us all dope in first letter. BOX A 5547, Air Conditioning & Refrigeration News.

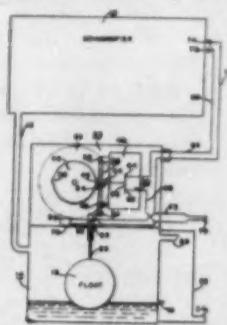
For more information about products advertised on this page use Information Center, page 30.

(Concluded from preceding page) bers of the discharge valve beyond a desired range of movement, and a suction valve connected adjacent to the cylinder side of the plate, said suction valve including a base adapted to secure the suction valve in place adjacent to the plate, three similar, flexible, finger-like members projecting from the suction valve base at an angle to each other, each finger-like member terminating in a disk portion adapted to close a port through the plate, each disk portion having an integral projection to seat in the deck recess to prevent movement of the suction valve beyond a desired range, the connections between the discharge valve and the valve plate and the suction valve and the valve plate being disposed on opposite sides of that portion of the valve plate interposed between the cylinder and the compartment wherein the discharge valve is mounted.

2,725,196. DEHUMIDIFIER CONTROL SYSTEM. Francis F. Tritschuh, Piqua, Ohio, assignor to General Motors Corp., Detroit, Mich.

1. A control system for an electrically operated dehumidifier including in combination, means for effecting periodic operation of the dehumidifier

for a predetermined time interval, means responsive to the amount of moisture condensation during operation of the dehumidifier for said predetermined time interval, and means



controlled by said second recited means for selectively continuing operation of said dehumidifier after the elapse of said predetermined time interval if the amount of condensate is equal to or greater than a predetermined quantity, or discontinuing operation of said dehumidifier after the elapse of said predetermined time interval if the amount of condensate is less than said predetermined quantity.

Government Contracts

ARMY

Purchasing and Contracting Division, G4, Artillery and Guided Missile Center, Fort Sill, Okla.

EVAPORATIVE COOLERS 2000 CFM, 3000 CFM, 4000 CFM—Various—IFB E24-081-56-60—Bid Opening 4 June 56.

Auburn General Depot, Auburn, Wash.

The following items are procured under IFB QM 45149-56-48—Bid Opening 22 May 56.

4110-00-19183L CASE, DISPLAY, REFRIGERATED, open, cold, self-service, 2 deck, complete with 1½ hp. air cooled condensing unit, for remote operation, 230/60/1, complete with controls, starter, timer defroster, and expansion valve—Tyler Model X3D12; Hussmann Model D-12; Schmidt Model OD-11A; Bally Model 12TDD; or equal (#1), 2 ea.—4110-00-19184L CASE, MEAT DISPLAY, REFRIGERATED, Clerk service with 2 sets of trays, complete with ½ or ¾ hp. Air Cooled condensing unit, for remote operation, 230/60/1, Complete with Controls, starter, timer, defroster, and expansion valve—Tyler Model X12T; Schmidt Model CM111; Sherer Model 512C; Hill Model 80-CM; or equal (#2), 2 ea.—4110-00-19186L CASE, DISPLAY, REFRIGERATED, produce, self-service, complete with 1 hp. Air cooled condensing unit, for remote operation, 230/60/1, Complete with Controls, starter, timer, defroster, and expansion valve—Warren Model OVS-11; McCray Model FFD-11; Bally Model CPC-12; Victor Model VF5011DD; or equal (#4), 1 ea.—4110-00-19185L CASE, DISPLAY, DAIRY, Refrigerated, Open, cold, self-service, single; complete with 1½ hp. Air Cooled Condensing unit, for remote operation, 230/60/1, complete with controls, starter, timer defroster, and expansion valves—Tyler Model X3D12; Hussmann Model D-12; Schmidt Model OD-11A; Bally Model 12DD; or equal (#3), 1 ea.—4110-00-19188L CASE, REFRIGERATED, FROZEN FOOD DISPLAY, self-service, complete with 1 to 1½ hp. Air Cooled condensing unit; for remote operation, 230/60/1, Complete with Controls, Starter, Timer defroster, and expansion valve—Koch Model AR 16; Warren Model LO-8; McCray Model FF8; Hussmann Model L-8; or equal (#6), 3 ea.

NAVY

District Public Works Office, Fourth Naval District, Building No. 1, Second Floor, Naval Base, Philadelphia, Pa.

REPAIR AIR CONDITIONING Unit Key Punch Room Bldg. Nr 1 Phila Naval Air Station Depot—Job—IFB 4732/56B—Bid Opening 24 May 56.

District Public Works Office, Eleventh Naval District, San Diego, Calif.

ADDITIONAL AIR CONDITIONING for CIC & Fire Control Bldg., Fleet Air Defense Training Center, San Diego, Calif. Deposit of \$25 required for plans & specs.—Job—IFB 4158/56B—Bid Opening 29 May 56.

Navy Purchasing Office, 4th & Independence Ave., Washington, D. C. Attn.: SPF-1A.

MOBILE AIR CONDITIONER, shore based, Model Nr-1-38 ea.—IFB 600-1699-56—Bid Opening 4 June 56.

TEMPERATURE-HUMIDITY TEST CHAMBER—1 ea.—IFB 600-1703-56—Bid Opening 4 June 56.

Officer In Charge of Construction, Naval Air Advanced Training Command, Corpus Christi, Texas.

PROVIDING 40 TONS OF AIR CONDITIONING, including ducts, cooling tower, piping, and electrical work—Job (90 days)—IFB NBY 1069 B—Bid Opening 24 May 56.

PROVIDING COMMISSIONED OFFICERS MESS (Open) containing thirteen thousand square feet floor space, providing plumbing and electrical systems and air conditioning—Job 200 days—IFB NOY 89001 B—Bid Opening 31 May 56.

District Public Works Office, Third Naval District, Rm. 633, 90 Church St., New York 7, N. Y.

REFRIGERATED MINE BATTERY STORAGE FACILITY U. S. Naval Ammunition Depot, Earle, N. J. \$25 deposit required for plans and specs.—Job—IFB NOY-91905—Bid Opening 25 May 56.

AIR FORCE

Procurement Division, Norton Air Force Base, Calif.

AIR CONDITIONING SYSTEM for IBM Room, Bldg. 522, Norton Air Force Base, San Bernardino, Calif. Consisting of installation of evaporative condenser, chemical tank & "Blow-Down," liquid receivers, central air handling unit, cooling coils, compressor units, electronic regulators, gauges, ductwork, metal work, structural timbers, carpentry, cement, painting, plumbing, electrical work and misc. related items.—Job—IFB 04-607-56-328—Bid Opening 31 May 56.

Procurement Division, Norton Air Force Base, Calif.

INSTALL EVAPORATIVE COOLERS in 11 base buildings and related services Norton Air Force Base, San Bernardino, Calif.—Job—IFB 04-607-56-316—Bid Opening 22 May 56.

Purchasing and Contracting Office, Mountain Home Air Force Base, Idaho.

INSTALL EVAPORATIVE COOLING in Airmen's Dormitories—Job—IFB 10-603-56-101B—Bid Opening 12 June 56.

INSTALL EVAPORATIVE COOLING in Bachelor Officers Quarters—Job—IFB 10-603-56-102B—Bid Opening 12 June 56.

Base Procurement Office, Randolph Air Force Base, Texas.

AIR CONDITIONING AND MODIFICATION of Special Weapons Building 7, Randolph Air Force Base, Texas—Job—IFB 41-606-56-101—Bid Opening 7 June 56.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta, Ga.

AIR CONDITIONING FOR COURT ROOM, Judge's Suite, Tallahassee, Fla.

Post Office—Job—IFB CR4-1306—Bid Opening 5-22-56.

General Services Administration, Region 5, Business Service Center, 7th & D Sts., S.W., Washington 25, D. C.

AIR CONDITIONING CONFERENCE ROOM, Reid-Cutshall Bldg., 211-15 W. Campbell Ave., Roanoke, Va.—Job—IFB GS-R2-B-4618—Bid Opening 6-1-56.

General Services Administration, Region 5, 575 U. S. Courthouse, 219 S. Clark St., Chicago, Ill.

PARTIAL INTERIM AIR CONDITIONING at the U. S. Post Office, Courthouse, and Custom House, Detroit, Mich.—Job—IFB C&R 418—Bid Opening 5-31-56.

U. S. DEPARTMENT OF AGRICULTURE

Administrative Services Br., Agricultural Marketing Service, Eastern Area, Administrative Div., Room 1442-S, Agric. Bldg., 18th & Independence Ave., S.W., Washington 25, D. C.

The following items are procured under IFB 31-AMS-56 (E)—Bid Opening 5-24-56.

AIR CONDITIONING UNITS, Type I, (window type) installed on third floor of the Agricultural Extension Bldg., University of Georgia, Athens, Ga., 1 ton unit, 2 ea.—½ ton unit, 4 ea.

Department of Agriculture, Agricultural Marketing Service, Western Area Administrative Division, 1515 Clay St., 6th Floor, Oakland 12, Calif.

SECTIONAL COLD STORAGE UNIT—1 ea.—IFB 63-AMS-56(W)—Bid Opening 6-1-56.

For more information about products advertised on this page use Information Center, page 30.

Mueller Climatrol Names Edw. Knott

MILWAUKEE—F. J. Nunlist, Jr., vice president in charge of sales for Mueller Climatrol, has

announced the appointment of Edward Knott, Fond Du Lac, Wis., as the company's salesman for northern Wisconsin and the upper Michigan peninsula.

Edward Knott will cover the territory north of a line between Sheboygan, Wisconsin Rapids, and Superior.

Trane Co. Moves Miami, Billings Sales Offices

LA CROSSE, Wis.—The Trane Co. has announced address and telephone number changes for its Miami, Fla. and Billings, Mont. sales offices.

The Miami sales office is now located at 2009 S.W. 1st St., Miami 35. R. Douglas Hazen is sales representative in charge of the office. Telephone number is 9-1361.

New address of the Billings sales office is 403 N. 24th St.; telephone number, 9-0269. R. B. Burtress is manager of the Billings office, assisted by Dennis W. Nelson.

Better Heating-Cooling Council Appoints Owens

NEW YORK CITY—An appointment to the public relations staff of the Better Heating-Cooling Council was announced by Franklin Greene, executive director.

Warren Owens, former editor of a trade publication, will concentrate on television and consumer magazine editorial work, Greene said.

BHC was organized last February, supported by more than 35 manufacturers, to promote greater sales of "lifetime" hot water and steam heating and compatible cooling systems in homes and small buildings.

Square D Names 2 To New Positions

DETROIT—Square D Co. has named William Younger eastern sales manager and William Moriarty distributor sales specialist, according to Frank Roby, vice president-sales.

Younger has been Square D's merchandise sales and advertising manager and Moriarty has been manager of the York, Pa. field office.

Both positions have been newly created as part of the company's current expansion of marketing operations, Roby said.

"This program now under way provides for entering several new electrical equipment markets with improved product designs; further extension of the present 75-city field organization on the North American continent; the construction of at least two new assembly plants in growing U. S. population centers, and greatly increased sales effort abroad," he stated.

Electric House Heating Story Told on Color Film; Questions Answered About Electric Heating Costs

NEW YORK CITY—The electric heating story, which is being told and sold to an increasing number of homeowners, has been put on film by the Electric House Heating Equipment Section of the National Electrical Mfrs. Association for nationwide consumer presentation, it was announced by Robert E. Pequignot, section chairman.

This latest in the electrical industry's sales promotional tools is a 35 mm. full-color, sound film—an 18-minute presentation. The film and its accompanying consumer booklets have been field tested and approved by top executives of the section for sales appeal, interest, and accuracy, Pequignot said.

Four narrators are featured in the film to trace the history of man's struggle to create warmth for his home from the days of the caveman to the present advent and acceptance of electric heat.

Flat Foil Bonded to Insulation Material

Devised To Provide Wide-Area Radiant Heat

LONDON, Eng.—A new method of heating using fairly large panels which produce radiant heat over a wide area is being developed here, according to a recent report.

Space Heating, Ltd. is working on a new system which consists of metal foil sandwiched between insulating material and can be used on ceilings, floors, walls, or between partitions, it was stated.

One advantage claimed for this method is that the heat will make itself felt only a minute or so after being switched on.

H. W. Lessing, managing director of the firm, describes the method as "still in the experimental stage." It may be a year before it is ready for the market.

Slant-Fin 'Name the Baseboard' Contest Offers 31 Prizes to Heating, Plumbing Equipment Men

RICHMOND HILL, N. Y.—A "Name the Baseboard" contest, offering 31 prizes to members of any firm regularly engaged in selling and installing heating and plumbing equipment, has been announced by Slant-Fin Radiator Corp. here.

Contest subject is Slant-Fin's new ¾-in. baseboard radiator package which comes complete with heating element, snap-on cover assembly, "clip" hangers, splice plate, and adjustable vane damper, the company said.

Each entrant must submit in writing, on his firm's letterhead, a proposed name for the baseboard radiator, and the rea-

son(s) this name was chosen. First prize is a \$300 U. S. Savings bond; second, a \$200 bond; and third, \$100. In the fourth prize group \$25 bonds are given, fifth prize group to wholesalers only, bonds run \$150, \$100, and \$50, according to Slant-Fin.

Any contractor or employee of a contractor who enters should submit the name of a wholesaler from whom he purchased baseboard radiators. Then the wholesaler can win a prize (fifth group) too.

Every person entering the contest will receive a gift, it was added.

Viking Air Products Appoints Pacific Scientific To Cover Heating, Air Conditioning Mfrs., Wholesalers in Northwest

CLEVELAND—Robert V. Scientific, manufacturers' representative currently covering California heating and air conditioning manufacturers and wholesalers for Viking, now will represent Viking in calls made on heating and air conditioning manufacturers in the other two northwest states.

Sales engineers of Pacific

Fannie Mae-- Chicago Hermetic Unit Ruling--

(Concluded from Page 1, Col. 3)

One of the subcommittee's recommendations would authorize Fannie Mae to make standby commitments to builders; in other words, guarantee them that the agency would buy mortgages at a specified price at some future date.

Another would reduce Fannie Mae's stock-purchase rule that a person selling a mortgage to the agency must buy some of its stock—from 3% to 2% of the value of the mortgage.

Still another would allow the Government, through Fannie Mae, to use about \$500 million in National Service Life Insurance funds to make home loans at par in high discount areas.

How Home Building Went During April

WASHINGTON, D. C.—Here's the "picture" on home building activity and housing starts in April as reported by the Labor Dept., the Veterans Administration, and F. W. Dodge Corp.

The Labor Dept. said housing starts in April were 10% higher than in March but down 20% compared with April, 1955. Builders started 106,000 units, including 1,000 public housing units, in April, it was said.

The gain in April over March was about as expected in the normal seasonal trends, it was pointed out. Thus, the seasonally adjusted annual rate of privately-financed units remained steady at 1,110,000—about the same as the previous two months. In April a year ago, the seasonally adjusted annual rate reached a level of 1,374,000 units.

The Veterans Administration reported that builders' requests in April for appraisals on proposed construction rose 22% over March but declined 31% from April last year.

The VA said appraisal requests in April for proposed construction totaled 45,769, compared with 37,511 in March and 65,856 in April, 1955. Such requests are the best indication of activity under the GI home loan program in the coming months.

According to F. W. Dodge Corp., construction news and marketing specialists, contract awards for future home building east of the Rocky Mountains in April hit a new high for the second consecutive month.

Dodge reported that residential construction awards for that area totaled \$1,144,160,000, 7% higher than in April last year and 3.5% above March, 1956.

Thomas S. Dodge, vice chairman of Dodge, pointed out that the actual number of housing units was still below last spring but that the dollar figures "are going up because of higher prices." The long-term trend to larger and more expensive houses is now most noticeable.

Non-residential awards in April totaled \$821,549,000, a gain of 16% over April last year and a drop of 6.7% compared with March, 1956. Contracts in the heavy engineering category amounted to \$455,788,000, down 17% from the like year-ago month but up 15% from March.

(Concluded from Page 1, Col. 5)

for the Inspection of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants.

"We accepted in the past, certification from the manufacturer that a system was so constructed that it would not burst due to the expansion of refrigerant when subjected to abnormal temperatures such as that generated by a fire," said Gerald Gearon, supervising mechanical engineer for the department, in explaining the ruling.

"We were informed that the Neoprene bushings sealing the electrical terminals in the sealed compressor housing would relieve pressure under fire conditions.

"However, during the year 1955 two such systems in window-model air conditioning units

burst in fires caused by overloaded electrical circuits, and resulted in considerable damage. A fireman in one case was blown off a second floor ladder and was seriously injured.

"It was thus necessary to issue the ruling in the interests of public safety."

The following is the text of the ruling issued by the City of Chicago Department for the Inspection of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants.

"Refrigeration systems, operating above atmospheric pressure, regardless of the purpose for which they are used, and powered by a motor or power unit larger than 1 hp., shall be equipped with an approved pressure relief device set at a pressure not to exceed the lowest maximum design working pres-

sure of the components comprising the refrigerating system assembly.

"However, no pressure relief device is required on the above type of system, where a certified copy of a strength pressure test on such type of system is placed on file with the Department where pressure, equivalent to that generated by a fire is employed, and warrants that components of such system will not be stressed beyond the elastic limits of the respective components from such pressure.

"Shell type apparatus for refrigerating systems such as liquid receivers, condensers, accumulators, etc., shall be equipped with an approved pressure relief device in compliance with Section 61 of Chapter 85 of the Chicago Municipal Code.

"Soft soldered joints, rubber or synthetic gaskets, or a fusible plug shall not be permitted as a relief device."

Lennox Unit Price--

(Concluded from Page 1, Col. 2)

magazines as *Life*, *Better Homes & Gardens*, *Popular Mechanics*, *Time*, and *American Home*.

John W. Norris, Lennox president, said the Stowaway "represents our finest air-cooled central air conditioning equipment, with savings in manufacturing costs, made possible by such design advancements as our 'Power Prop,' being passed along to the consumer."

Like all other Lennox equipment, the Stowaway is sold and installed only by the certified Lennox dealer, it was pointed out. However, installation costs will, in most cases, also be reduced due to the installation flexibility of this equipment.

The Stowaway lends itself "to a wide variety of simplified installations," it was noted.



THE NEW  UNARCO

DYNA-PAC

... FEATURING BOTH ECONOMY AND EFFICIENT LONG LIFE

- 2-, 3-, 5-ton capacities in water-cooled or air-cooled models
- For residential and commercial installations
- Selective manual humidity control
- Built-in plenum
- 4-way adjustable top air discharge on free blow models

The all-new UNARCO Dyna-Pac meets the challenge of better air conditioning at lower cost. What's more, it was designed with the installing contractor in mind. All Dyna-Pac units are pre-wired and pre-piped for easy, low-cost installation.

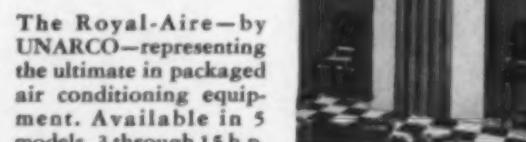
There is economy in both the low initial cost and minimum maintenance required. There is also economy of space with the compactly designed DYNA-PAC. Duct models can be attached to existing warm air heating systems to provide year 'round conditioning.

Write Dept. HC-105 for full information, including catalog and prices.

UNION ASBESTOS & RUBBER COMPANY
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PACKAGED
AIR CONDITIONERS



The Royal-Aire—by UNARCO—representing the ultimate in packaged air conditioning equipment. Available in 5 models, 3 through 15 h.p.

HAVE YOU ENROLLED IN UNARCO'S DEALER PLUS PLAN? WRITE NOW FOR FULL DETAILS OF BIG DEALER AWARD PROGRAM.

For more information about products advertised on this page use Information Center, page 30.